APPENDIX A
Environmental Justice Review Documentation

TABLE A-1

WASHINGTON STATE DEPARTMENT OF HEALTH ENVIRONMENTAL HEALTH DISPARITIES SUMMARY

WHIDBEY MARINE AUTO SUPPLY SITE

FREELAND WASHINGTON

Environmental Health Disparities V 2.0		Risk Rank (Scaled 1 to 10)
Environmental Exposures (1)	Diesel Exhaust PM2.5 Emissions	1
	Ozone Concentration	3
	PM2.5 Concentration	2
	Proximity to Heavy Traffic Roadways	1
	Toxic Releases from Facilities (RSEI Model)	5
Environmental Effects (1)	Lead Risk From Housing (%)	3
	Proximity to Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs)	3
	Proximity to National Priorities List Facilities (Superfund Sites)	2
	Proximity to Risk Management Plan (RMP) Facilties	1
	Wastewater Discharge	-
Socioeconomic Factors (3)	Primary Language Other Than English	1
	No High School Diploma (%)	1
	People of Color (Race/Ethnicity)	3
	Population Living in Poverty <=185% of Federal Poverty Level (%)	3
	Transportation Expense	8
	Unaffordable Housing (>30% of Income)	6
	Unemployed (%)	8
Sensitive Populations (8)	Death from Cardiovascular Disease	4
	Low Birth Weight - Combined (%)	10

EJScreen ACS Summary Report

Location: 5 miles Ring Centered at 48.009947,-122.523623
Description: Whidbey Marine & Auto

Summary of ACS Estimates	2018 - 2022
Population	9,391
Population Density (per sq. mile)	225
People of Color Population	919
% People of Color Population	10%
Households	4,132
Housing Units	5,795
Housing Units Built Before 1950	315
Per Capita Income	N/A
Land Area (sq. miles) (Source: SF1)	41.65
% Land Area	55%
Water Area (sq. miles) (Source: SF1)	34.63
% Water Area	45%

	2018 - 2022 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	9,391	100%	441
Population Reporting One Race	9,052	96%	732
White	8,521	91%	368
Black	117	1%	101
American Indian	100	1%	97
Asian	197	2%	83
Pacific Islander	3	0%	13
Some Other Race	115	1%	70
Population Reporting Two or More Races	339	4%	95
Total Hispanic Population	318	3%	115
Total Non-Hispanic Population	9,073		
White Alone	8,471	90%	357
Black Alone	117	1%	101
American Indian Alone	37	0%	39
Non-Hispanic Asian Alone	197	2%	83
Pacific Islander Alone	3	0%	13
Other Race Alone	45	0%	57
Two or More Races Alone	204	2%	67
Population by Sex			
Male	4,739	50%	269
Females	4,652	50%	217
Population by Age			
Age 0-4	143	2%	60
Age 0-17	1,139	12%	133
Age 18+	8,252	88%	329
Age 65+	3,311	35%	244

Data Note: Detail may not sum to totals due to rounding.Hispanic population can be any race.
N/A means not available. Source: U.S. Census Bureau, American Community (ACS) 2018 - 2022.

EJScreen ACS Summary Report

Location: 5 miles Ring Centered at 48.009947,-122.523623
Description: Whidbey Marine & Auto

	2018 - 2022 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	7,841	100%	361
Less than 9th Grade	0	0%	37
9th - 12th Grade, No Diploma	228	3%	66
High School Graduate	1,093	14%	130
Some College, No Degree	1,972	25%	224
Associate Degree	755	10%	115
Bachelor's Degree or more	3,792	48%	260
Population Age 5+ by Ability to Speak English			
Total	9,248	100%	434
Speak only English	8,942	97%	416
Non-English at Home[1+2+3+4]	305	3%	93
[1]Speak English "very well"	257	3%	85
[2]Speak English "well"	31	0%	57
[3]Speak English "not well"	17	0%	46
[4]Speak English "not at all"	0	0%	45
[3+4]Speak English "less than well"	17	0%	65
[2+3+4]Speak English "less than very well"	48	1%	86
Limited English Speaking Households*			
Total	12	100%	27
Speak Spanish	5	41%	14
Speak Other Indo-European Languages	7	59%	13
Speak Asian-Pacific Island Languages	0	0%	13
Speak Other Languages	0	0%	13
Households by Household Income			
Household Income Base	4,132	100%	224
< $15,000	333	8%	97
$15,000 - $25,000	291	7%	208
$25,000 - $50,000	479	12%	123
$50,000 - $75,000	522	13%	67
$75,000	2,508	61%	180
Occupied Housing Units by Tenure			
Total	4,132	100%	224
Owner Occupied	3,619	88%	226
Renter Occupied	513	12%	97
Employed Population Age 16+ Years			
Total	8,382	100%	428
In Labor Force	4,157	50%	353
Civilian Unemployed in Labor Force	117	3%	53
Not In Labor Force	4,226	50%	264

Data Note: Detail may not sum to totals due to rounding.Hispanic population can be any race.
N/A means not available. Source: U.S. Census Bureau, American Community (ACS) 2018 - 2022.
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJScreen ACS Summary Report

Location: 5 miles Ring Centered at 48.009947,-122.523623
Description: Whidbey Marine & Auto

	2018 - 2022 ACS Estimates	Percent	MOE (±)
Population by Languages Spoken at Home*			
Total (persons age 5 and above)	11,113	100%	428
English	10,694	96%	430
Spanish	182	2%	110
French, Haitian, or Cajun	11	0%	16
German, or other Western Germanic	14	0%	22
Russian, Polish, or Other Slavic	3	0%	13
Other Indo-European	77	1%	50
Korean	0	0%	13
Chinese (including Mandarin, Cantonese)	28	0%	50
Vietnamese	21	0%	43
Tagalog (including Filipino)	0	0%	13
Other Asian and Pacific Island	35	0%	46
Arabic	47	0%	72
Other and Unspecified	0	0%	13
Total Non-English	419	4%	607

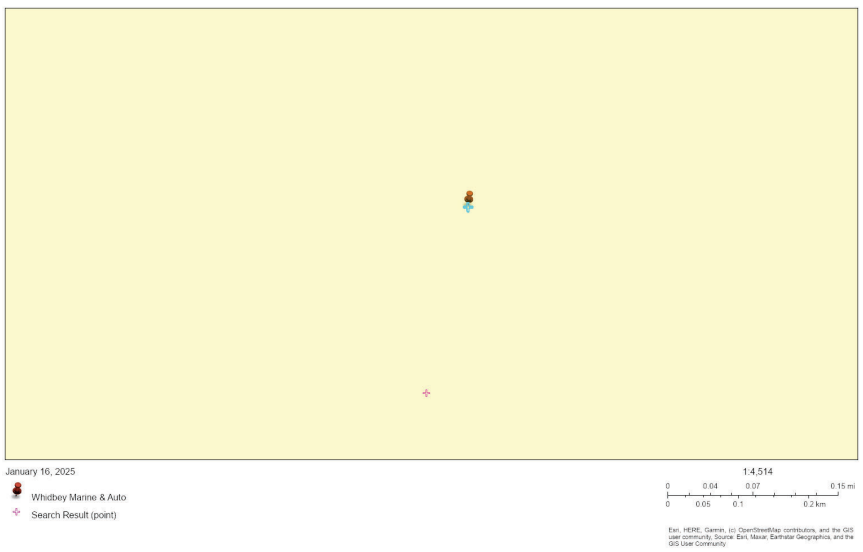
Data Note: Detail may not sum to totals due to rounding.Hispanic population can be any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community (ACS) 2018 - 2022.
*Population by Language Spoken at Home is available at the census tract summary level and up.

EJScreen Community Report

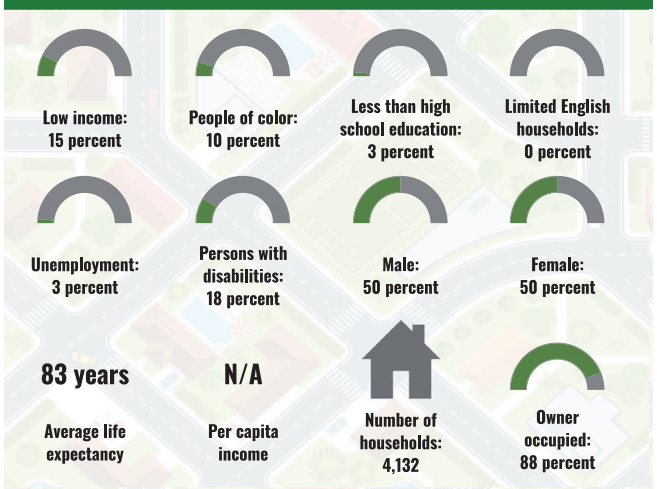
This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Whidbey Marine & Auto

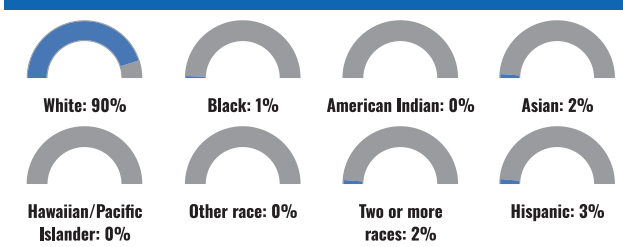
5 miles Ring Centered at 48.009947,-122.523623
Population: 9,391
Area in square miles: 78.53



COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE

LIMITED ENGLISH SPEAKING BREAKDOWN

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2018-2022. Life expectancy data comes from the Centers for Disease Control.

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	96%
Spanish	2%
Other Indo-European	1%
Total Non-English	4%

Report for 5 miles Ring Centered at 48.009947,-122.523623
Report produced January 15, 2025 using EJScreen Version 2.3

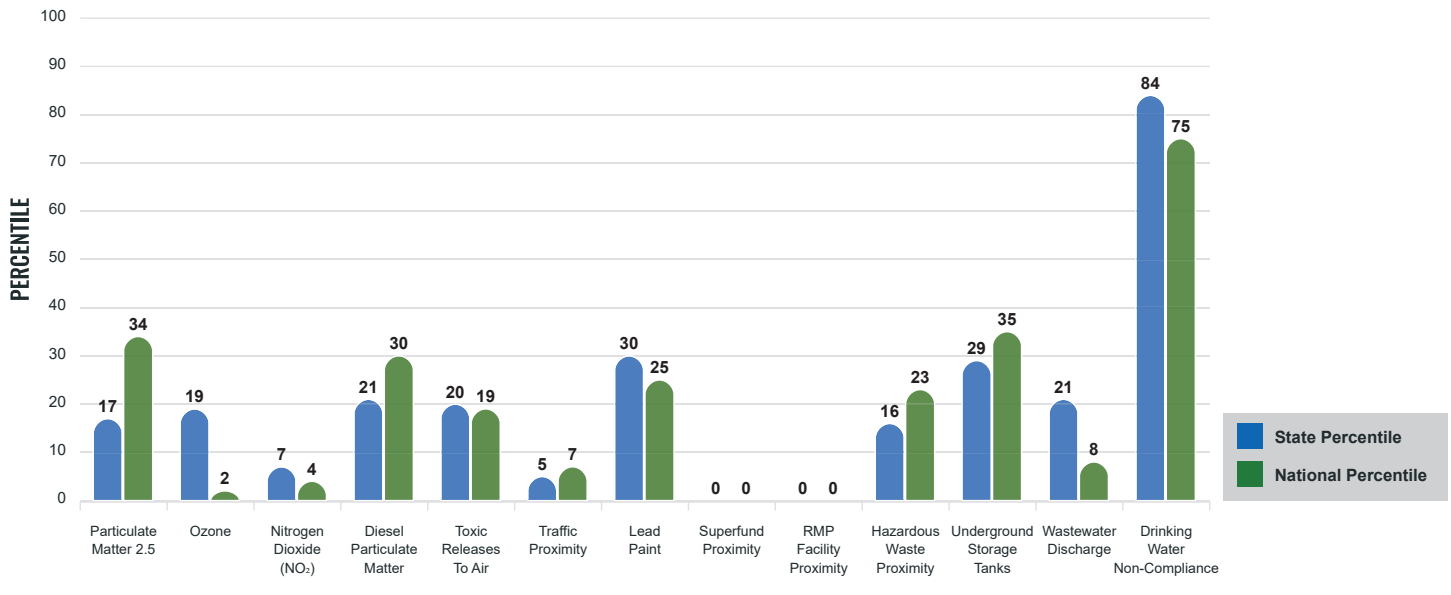
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

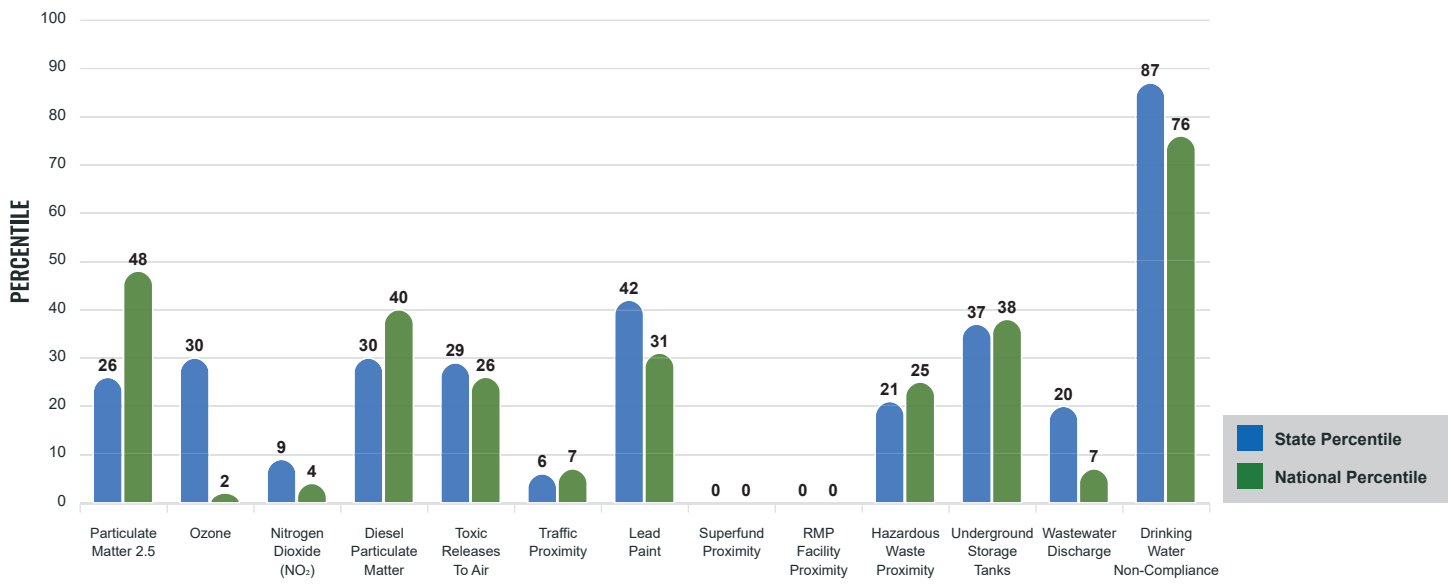
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for 5 miles Ring Centered at 48.009947,-122.523623

Report produced January 15, 2025 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
ENVIRONMENTAL BURDEN INDICATORS					
Particulate Matter 2.5 ($\mu g/m^3$)	8.32	9.51	23	8.45	56
Ozone (ppb)	50.6	51.8	28	61.8	2
Nitrogen Dioxide (NO_2) (ppbv)	2.7	6.3	8	7.8	5
Diesel Particulate Matter ($\mu g/m^3$)	0.141	0.256	30	0.191	44
Toxic Releases to Air (toxicity-weighted concentration)	200	1,800	34	4,600	32
Traffic Proximity (daily traffic count/distance to road)	32,000	1,200,000	7	1,700,000	9
Lead Paint (% Pre-1960 Housing)	0.1	0.23	44	0.3	36
Superfund Proximity (site count/km distance)	0	0.53	0	0.39	0
RMP Facility Proximity (facility count/km distance)	0	0.51	0	0.57	0
Hazardous Waste Proximity (facility count/km distance)	0.34	2.9	21	3.5	28
Underground Storage Tanks (count/km^2)	0.62	6.1	40	3.6	46
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.2	300	47	700000	16
Drinking Water Non-Compliance (points)	1.9	1	92	2.2	84
SOCIOECONOMIC INDICATORS					
Demographic Index USA	0.5	N/A	N/A	1.34	15
Supplemental Demographic Index USA	1.22	N/A	N/A	1.64	29
Demographic Index State	0.67	1.47	13	N/A	N/A
Supplemental Demographic Index State	1.08	1.37	36	N/A	N/A
People of Color	10%	33%	10	40%	21
Low Income	15%	23%	38	30%	27
Unemployment Rate	3%	5%	42	6%	43
Limited English Speaking Households	0%	4%	50	5%	56
Less Than High School Education	3%	8%	32	11%	25
Under Age 5	2%	5%	16	5%	19
Over Age 64	35%	17%	93	18%	93

*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities 1
Water Dischargers 10
Air Pollution 0
Brownfields 0
Toxic Release Inventory 0

Other community features within defined area:

Schools 0
Hospitals 0
Places of Worship 8

Other environmental data:

Air Non-attainment ..... No
Impaired Waters ..... Yes

Selected location contains American Indian Reservation Lands* ..... No
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... No
Selected location contains an EPA IRA disadvantaged community ..... Yes

Report for 5 miles Ring Centered at 48.009947,-122.523623

Report produced January 15, 2025 using EJScreen Version 2.3

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	16%	18%	22	20%	16
Heart Disease	6.8	4.8	90	5.8	71
Asthma	10.3	10.9	24	10.3	52
Cancer	10.1	6.5	98	6.4	97
Persons with Disabilities	18.1%	13.4%	80	13.7%	79

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	16%	11%	80	12%	81
Wildfire Risk	0%	12%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	7%	8%	56	13%	39
Lack of Health Insurance	4%	6%	35	9%	28
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access Burden	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for 5 miles Ring Centered at 48.009947,-122.523623

Report produced January 15, 2025 using EJScreen Version 2.3

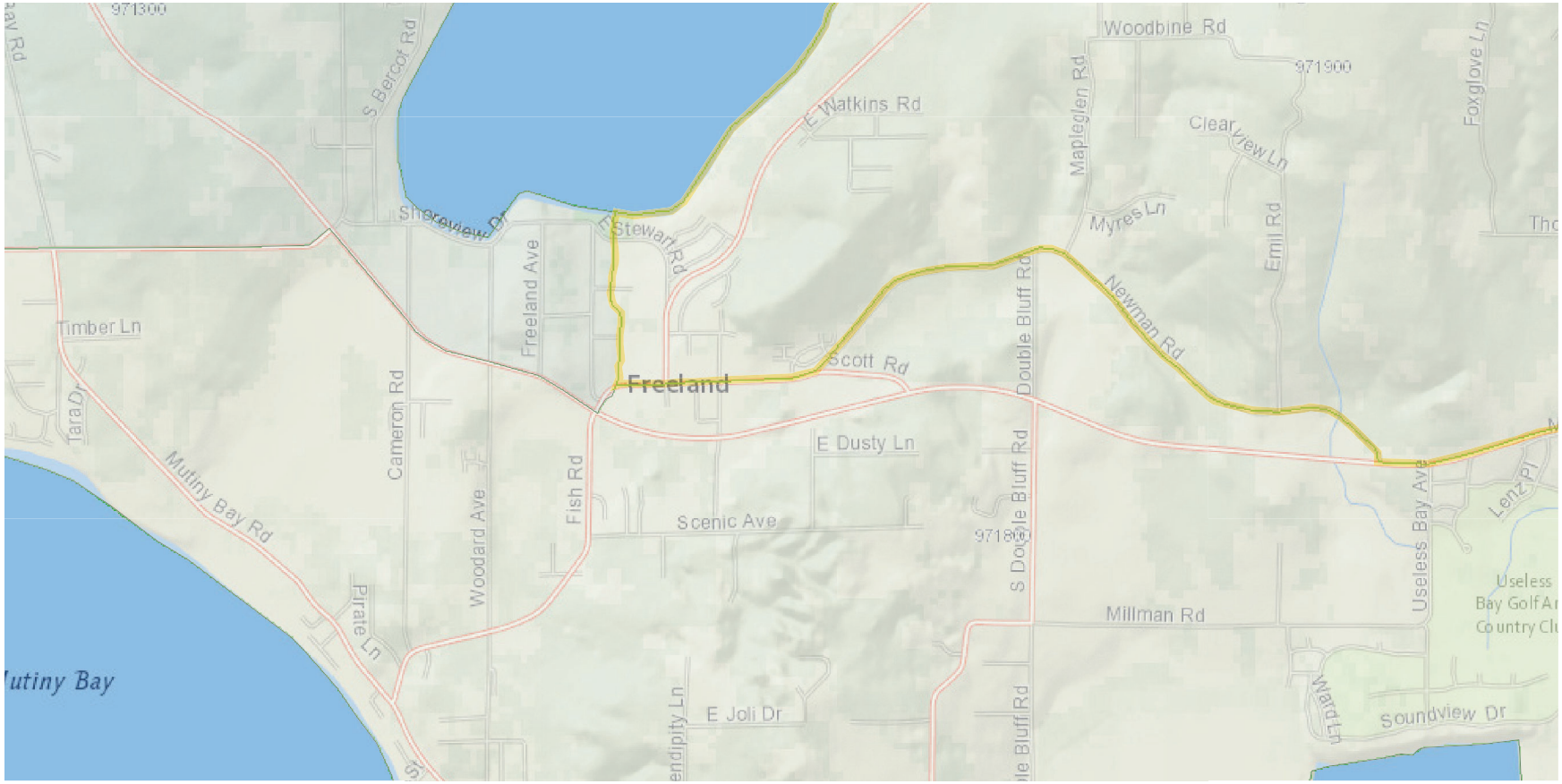
www.epa.gov/ejscreen

Washington State Department of Health

Selection: Environmental Health Disparities V 2.0 -> Environmental Effects **Date: 01/15/2025 at 4:25 PM**

Lead Risk From Housing (%), Proximity to Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs), Proximity to National Priorities List Facilities (Superfund Sites), Proximity to Risk Management Plan (RMP) Facilties, Wastewater Discharge

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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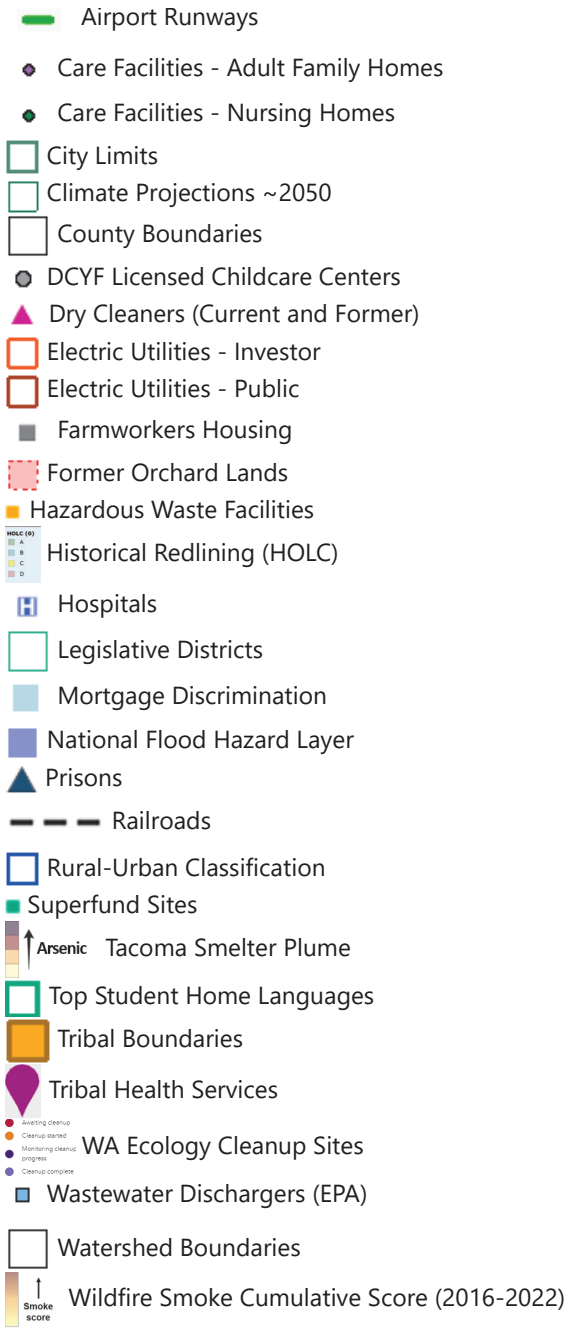
Airport Runways
Care Facilities - Adult Family Homes
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City Limits
Climate Projections ~2050
County Boundaries
DCYF Licensed Childcare Centers
Dry Cleaners (Current and Former)
Electric Utilities - Investor
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Hazardous Waste Facilities
HOLC (0)
A
B
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D
Historical Redlining (HOLC)
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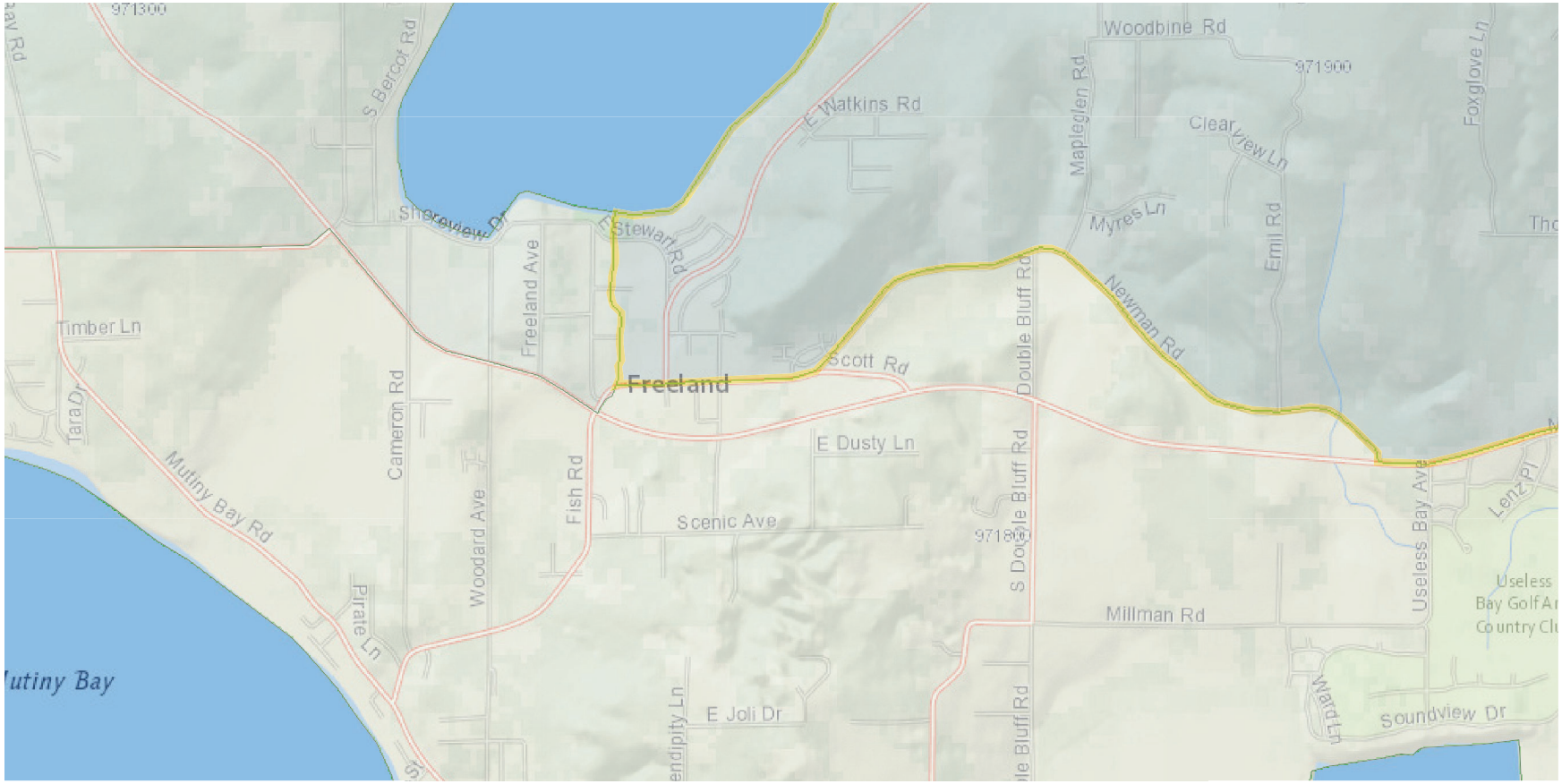
Tribal Health Services
Awaiting cleanup
Cleanup started
Monitoring cleanup progress
Cleanup complete
WA Ecology Cleanup Sites
Wastewater Dischargers (EPA)
Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

Washington State Department of Health

Selection: Environmental Health Disparities V 2.0 -> Socioeconomic Factors **Date: 01/15/2025 at 4:23 PM**

No High School Diploma (%), People of Color (Race/Ethnicity), Population Living in Poverty <=185% of Federal Poverty Level (%), Primary Language other than English, Transportation Expense, Unaffordable Housing (>30% of Income), Unemployed (%)

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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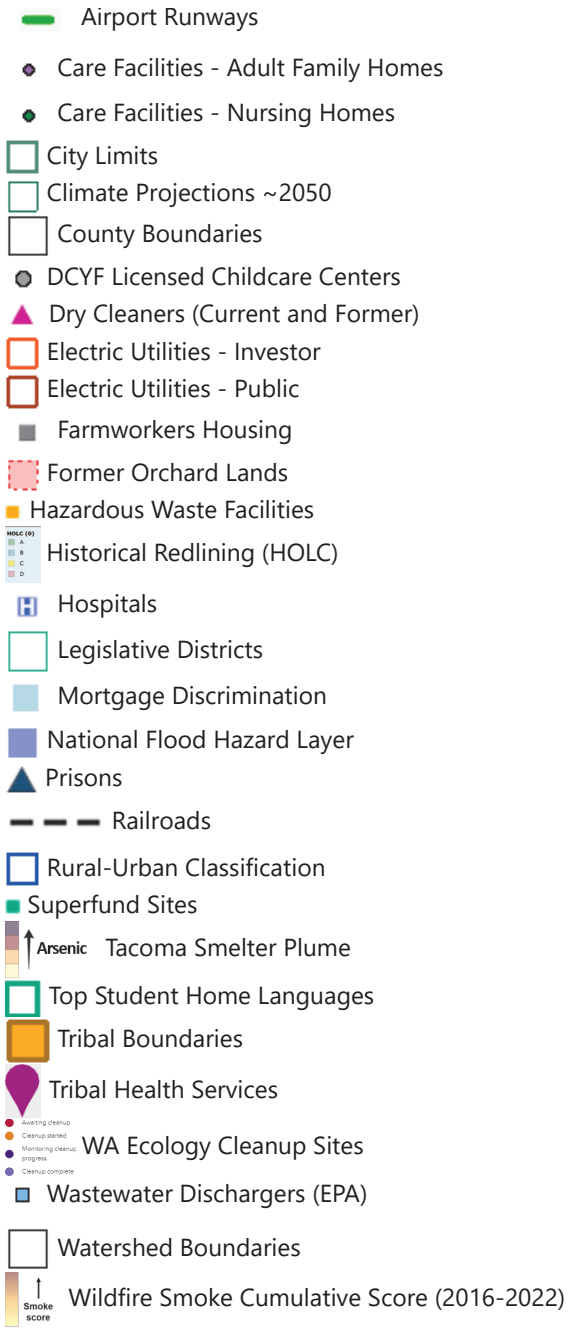
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WA Ecology Cleanup Sites
Wastewater Dischargers (EPA)
Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

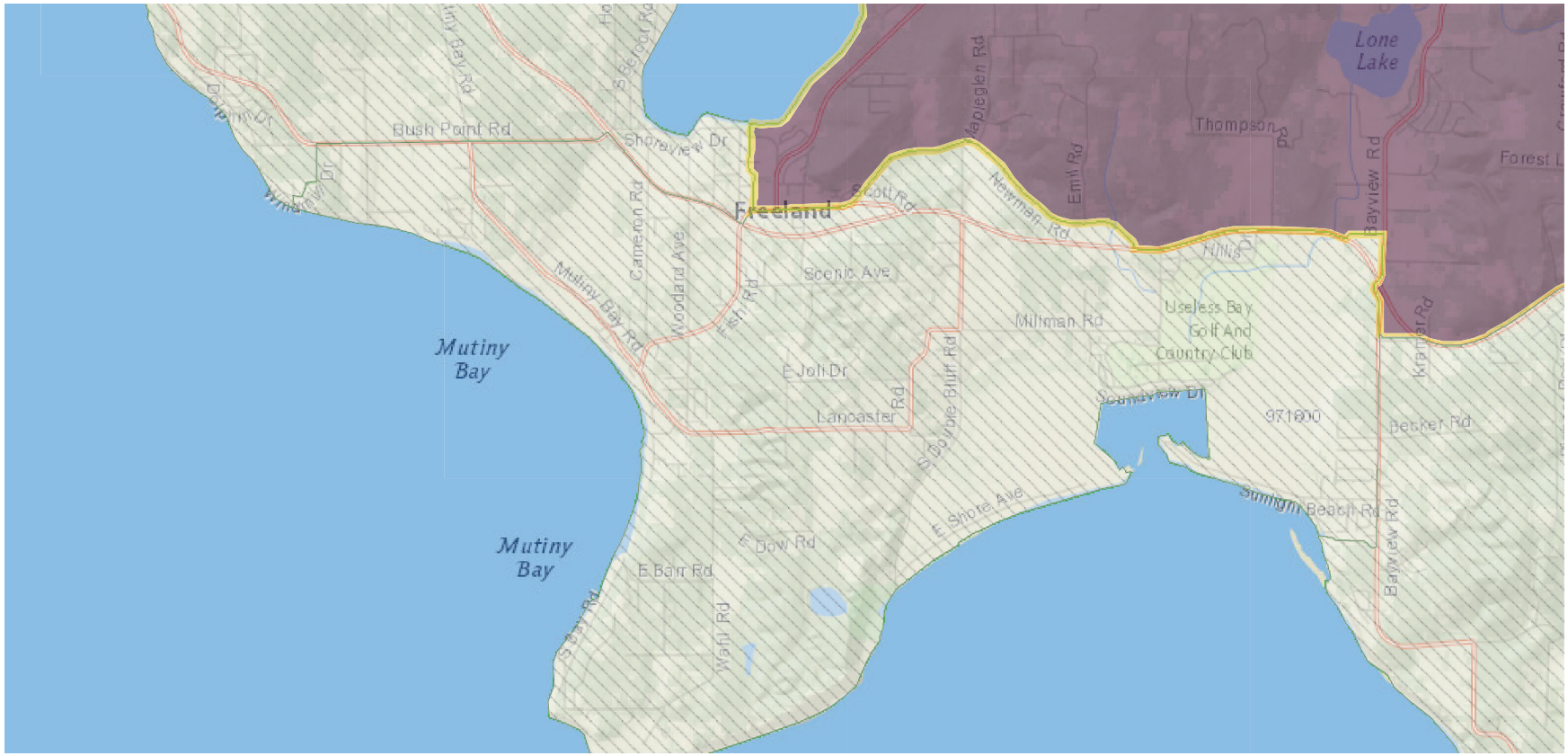
Washington State Department of Health

Selection:

Date: 01/15/2025 at 4:27 PM

Environmental Health Disparities V 2.0 -> Sensitive Populations -> Low Birth Weight - Combined (%)

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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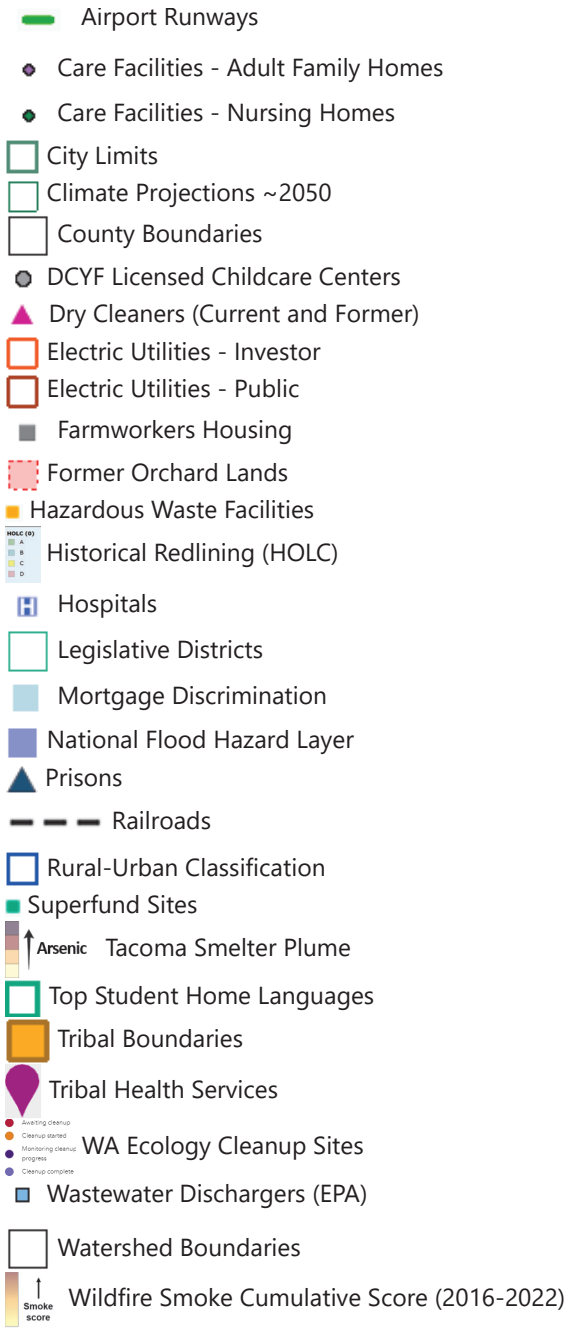
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Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

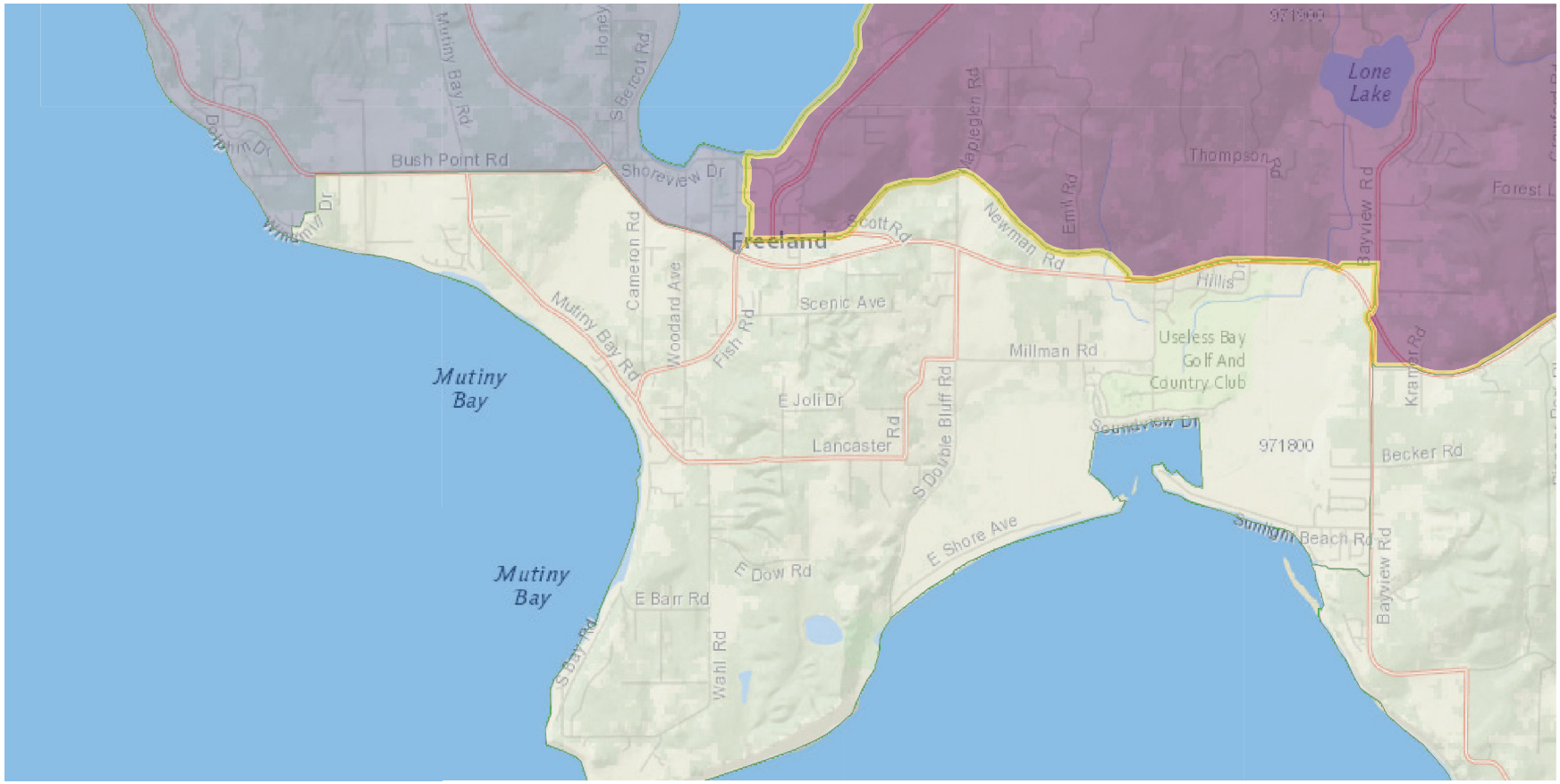
Washington State Department of Health

Selection: Environmental Health Disparities V 2.0 -> Sensitive Populations

Death from Cardiovascular Disease, Low Birth Weight - Combined (%)

Date: 01/15/2025 at 4:27 PM

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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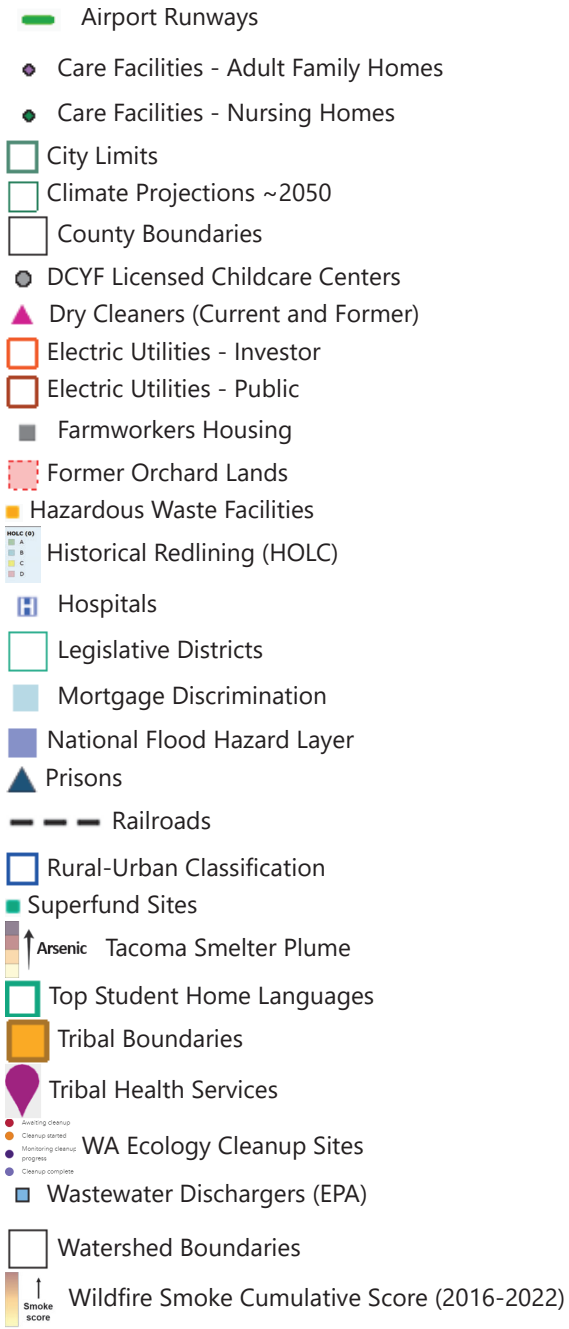
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Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

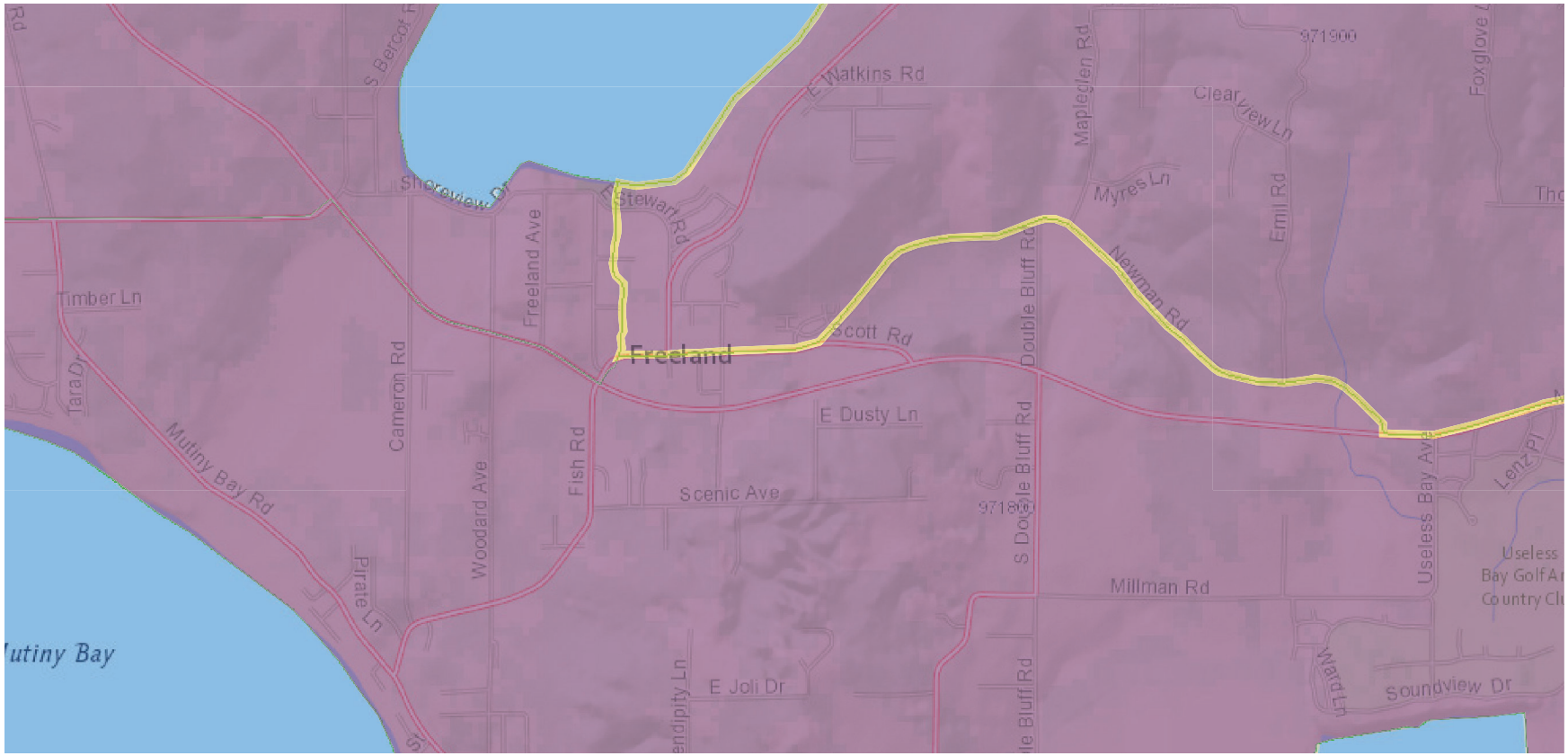
Washington State Department of Health

Selection:

Date: 01/15/2025 at 4:26 PM

Environmental Health Disparities V 2.0 -> Socioeconomic Factors -> Transportation Expense

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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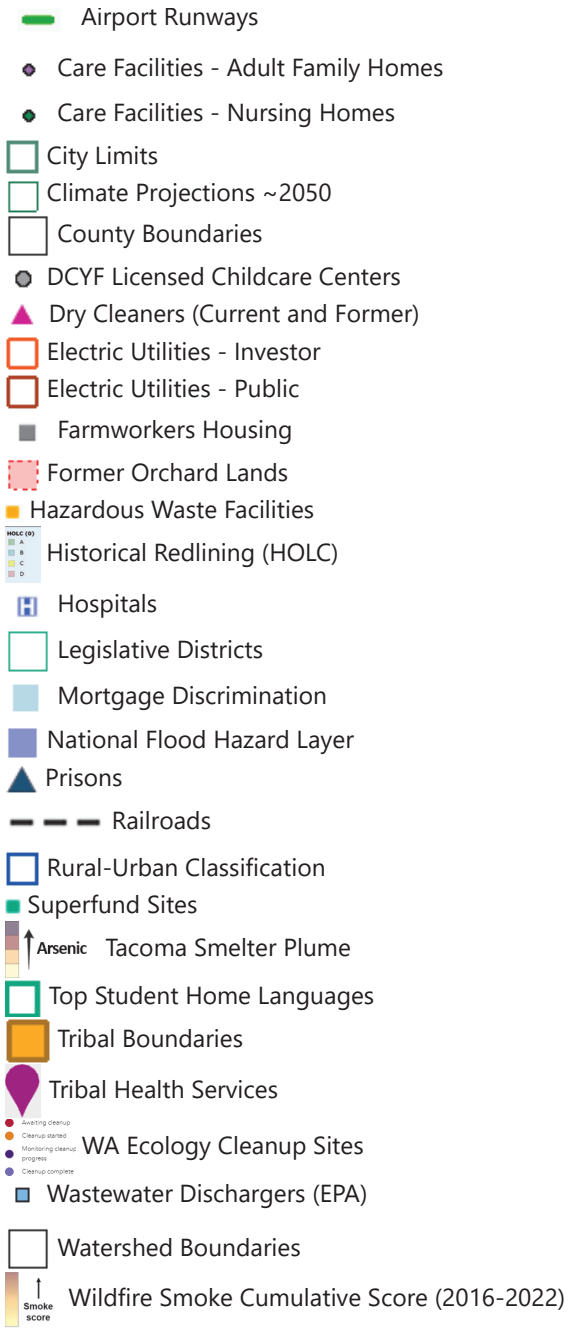
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Wildfire Smoke Cumulative Score (2016-2022)

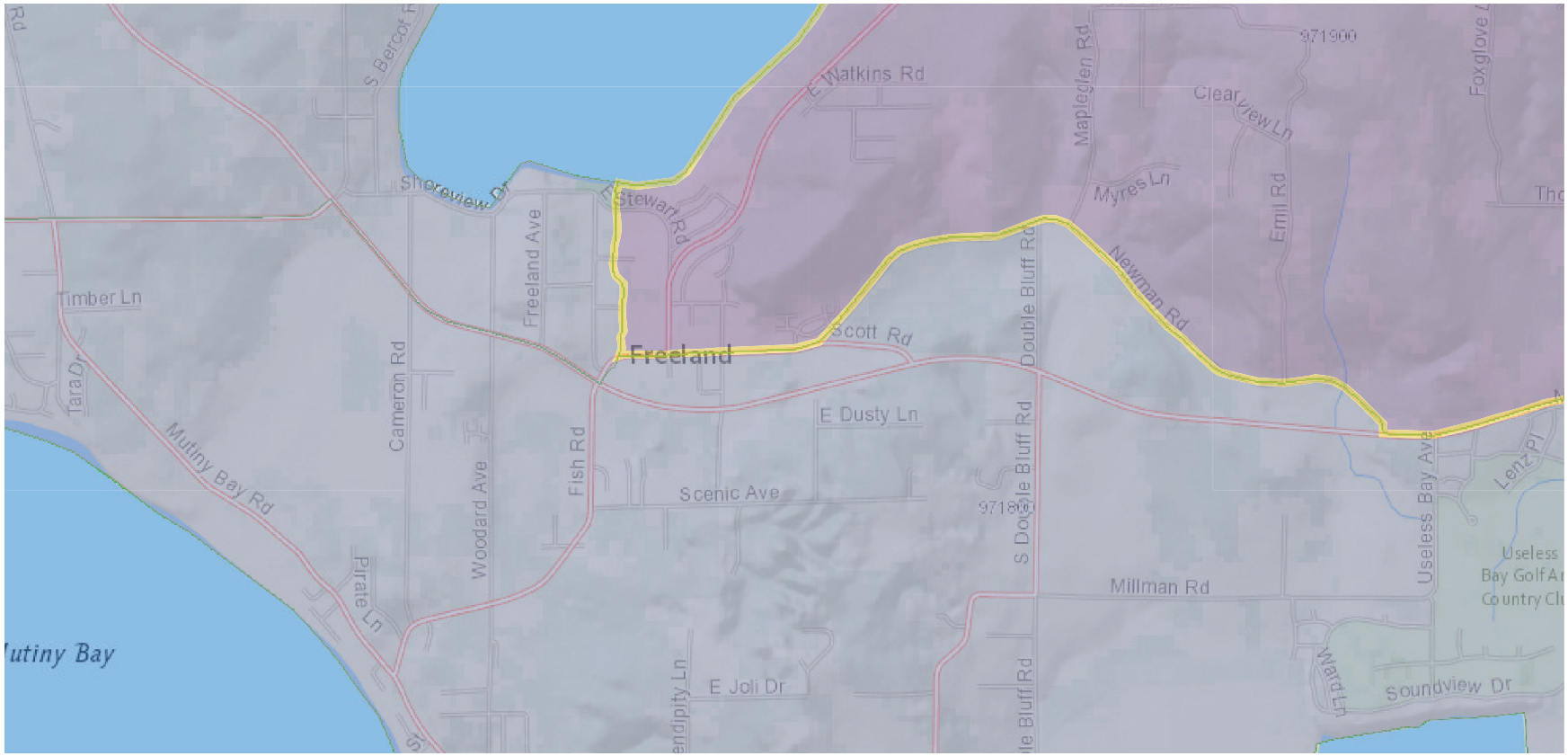
Washington State Department of Health

Selection:

Date: 01/15/2025 at 4:26 PM

Environmental Health Disparities V 2.0 -> Socioeconomic Factors -> Unaffordable Housing (>30% of Income)

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



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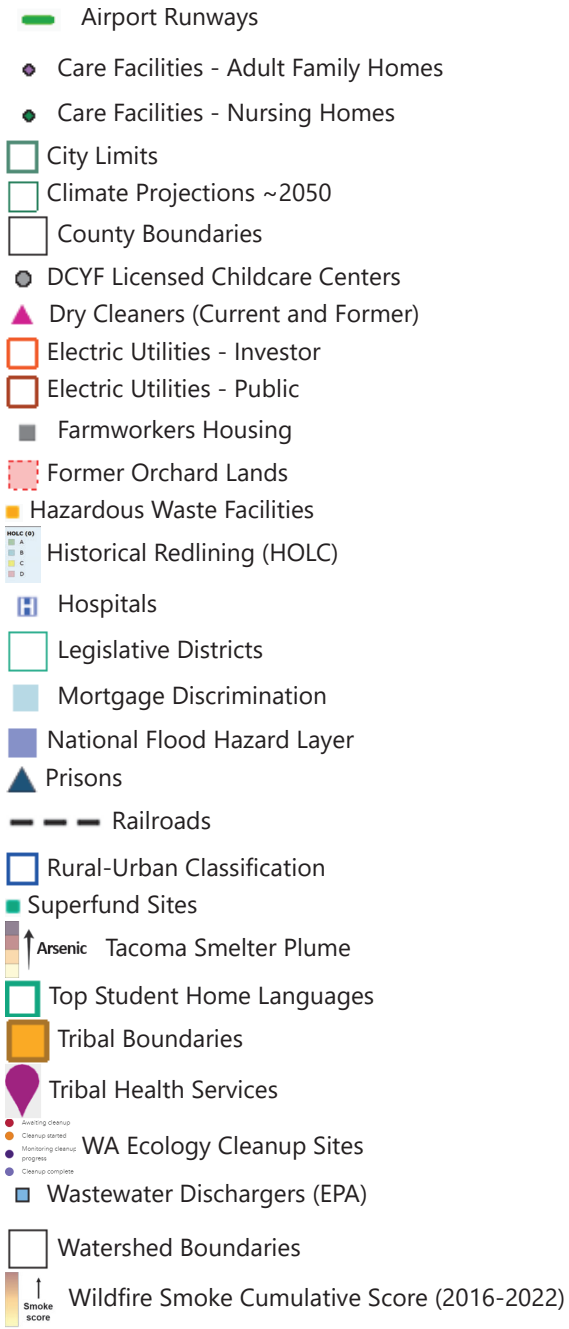
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Historical Redlining (HOLC)
Hospitals
Legislative Districts
Mortgage Discrimination
National Flood Hazard Layer
Prisons
Railroads
Rural-Urban Classification
Superfund Sites
Arsenic
Tacoma Smelter Plume
Top Student Home Languages
Tribal Boundaries
Tribal Health Services
WA Ecology Cleanup Sites
Wastewater Dischargers (EPA)
Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

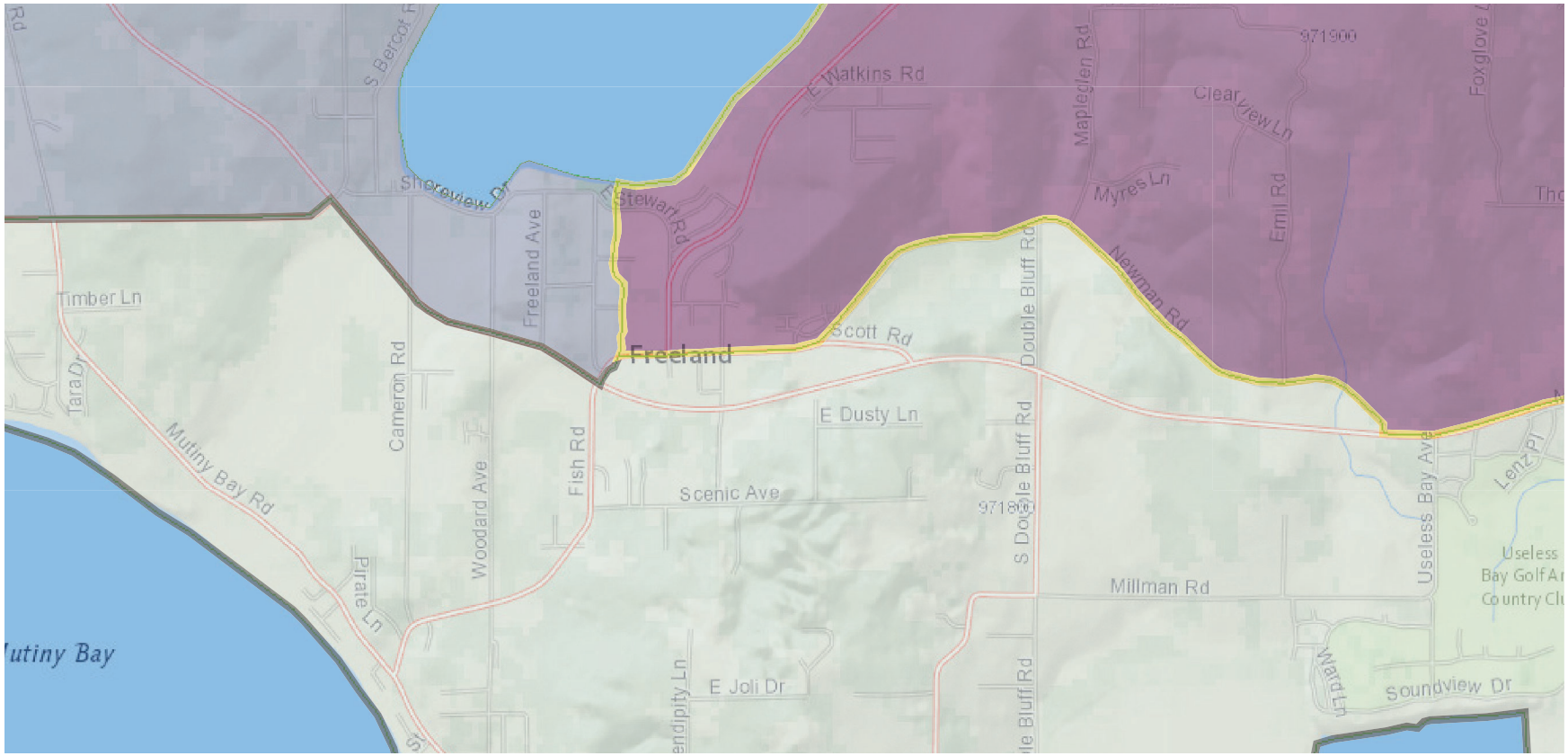
Washington State Department of Health

Selection:

Date: 01/15/2025 at 4:27 PM

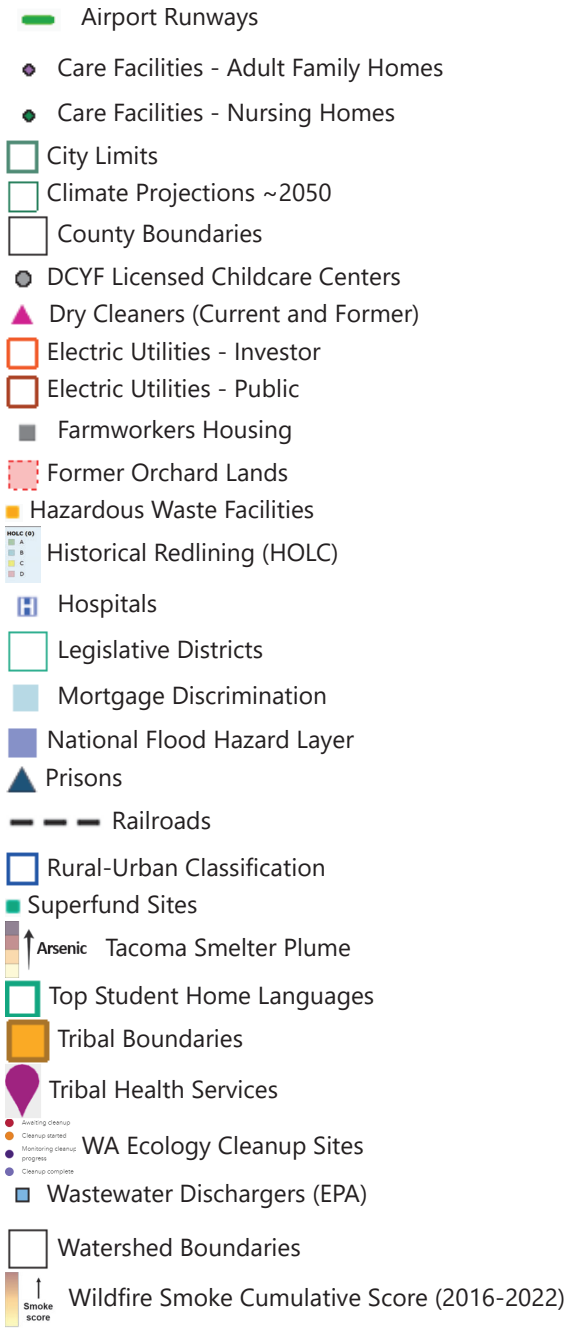
Environmental Health Disparities V 2.0 -> Socioeconomic Factors -> Unemployed (%)

Legend: (High) 10 9 8 7 6 5 4 3 2 1 **(Low)**



0.4mi

Legend


Airport Runways
Care Facilities - Adult Family Homes
Care Facilities - Nursing Homes
City Limits
Climate Projections ~2050
County Boundaries
DCYF Licensed Childcare Centers
Dry Cleaners (Current and Former)
Electric Utilities - Investor
Electric Utilities - Public
Farmworkers Housing
Former Orchard Lands
Hazardous Waste Facilities
Historical Redlining (HOLC)
Hospitals
Legislative Districts
Mortgage Discrimination
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WA Ecology Cleanup Sites
Wastewater Dischargers (EPA)
Watershed Boundaries
Smoke score
Wildfire Smoke Cumulative Score (2016-2022)

APPENDIX B
Soil Boring Logs and Well Development Details

TABLE B-1
WELL DEVELOPMENT DETAILS
WHIDBEY MARINE & AUTO SITE
FREELAND, WASHINGTON

Monitoring Well	Date Developed	Method of Development	Pre-Development				Post-Development			Total Volume Purged (gal)
			Depth to Water (ft)	Depth to Well Bottom (ft)	Casing Volume (gal)	Observations	Depth to water (ft)	Depth to Well Bottom (ft)	Observations	
MW-1S	1/26/2024	Submersible Pump	50.82	65.38	2.39		50.78	66.18	Clear	45
MW-2S	9/25/2023	Submersible Pump	53.85	56.58	0.45		54	56.55	Purged dry three times, clear	0.25
MW-3S	1/24/2024	Submersible Pump	--	--	--		52.23	60.54	Clear	18
MW-4S	9/25/2023	Submersible Pump	53.40	55.6	0.35		53.1	56.84		0.5
MW-5S	--	--			0.00					
MW-6S	9/25/2023	Submersible Pump	58.05	61.4	0.55	Strong odor, purged dry after 0.4 gallons	60.62	58	Purged dry five times, water slightly cloudy	2
MW-7S	9/25/2023	Submersible Pump	57.85	59.25	0.23	No water measured while pumping, unable to purge water	57.05	58.68		0
MW-8S	9/25/2023	Submersible Pump	54.84	60.15	0.87		60.45	54.8	slightly cloudy	4.5
MW-9D	9/25/2023	Hydrolift Pump	102.05	109.47	1.22	Gray sand, petroleum-like odor	102.18	109.7	Clear, petroleum-like odor	8
MW-10D	1/26/2024	Submersible Pump	100.64	111.58	1.79		100.87	111.72	Clear	20
MW-11D	1/26/2024	Submersible Pump	101.43	112.28	1.78		101.68	111.98	Clear	18
MW-12D	9/26/2023	Submersible Pump	101.56	111.23	1.59	Water was black for the first gallon, petroleum-like odor	101.64	111.25	Clear, petroleum-like odor	3
MW-13D	9/25/2023	Hydrolift Pump	103.74	110.63	1.13	Cloudy, petroleum-like odor	103.87	113.81	Clear, petroleum-like odor	5
MW-14D	9/25/2023	Hydrolift Pump	103.71	110.95	1.19	Cloudy, light brown sand	103.81	111.13	Clear	20
MW-15D	9/26/2023	Hydrolift Pump	104.34	112.75	1.38	Cloudy, light brown sand	112.98	113.75	Clear	20
MW-16D	9/26/2023	Hydrolift Pump	104.57	111.25	1.10	Cloudy, light brown sand	111.75	112.25	Clear	20
MW-17D	9/25/2023	Hydrolift Pump	102.93	117.67	2.42	Cloudy, gray sand, slight odor	117.19	117.67	Clear	8
MW-18D	9/25/2023	Submersible Pump	103.16	116.65	2.21	Clear	116.65	116.80	Clear	3
MW-19D	1/25/2024	Submersible Pump	104.20	112.3	1.33	Slightly cloudy, light brown color	103.56	113.30	Clear	25
MW-20D	1/24/2024	Submersible Pump	103.75	111.4	1.25	Cloudy, grayish brown sand	104.11	112.35	Clear	12
MW-21D	1/25/2024	Submersible Pump	102.00	110.4	1.38	Cloudy, light brown sand	101.84	110.30	Clear	10
MW-22D	1/25/2024	Submersible Pump	106.50	114.4	1.30	Cloudy, grayish brown sand	104.9	114.20	Clear	10
MW-23D	1/25/2024	Submersible Pump	103.50	111.4	1.30	Cloudy, grayish brown sand, petroleum-like odor	104.52	113.11	Clear, petroleum-like odor	15

Notes:

Depth to water and well bottom measured from the top of casing

-- = Not Available or Not Applicable

ft = feet

gal = gallons

Sample Description

Identification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. ASTM D 2488 visual-manual identification methods were used as a guide. Where laboratory testing confirmed visual-manual identifications, then ASTM D 2487 was used to classify the soils.

Relative Density/Consistency

Soil density/consistency in borings is related primarily to the standard penetration resistance (N). Soil density/consistency in test pits and probes is estimated based on visual observation and is presented parenthetically on the logs.

SAND or GRAVEL Relative Density	N (Blows/Foot)	SILT or CLAY Consistency	N (Blows/Foot)
Very loose	0 to 4	Very soft	0 to 1
Loose	5 to 10	Soft	2 to 4
Medium dense	11 to 30	Medium stiff	5 to 8
Dense	31 to 50	Stiff	9 to 15
Very dense	>50	Very stiff	16 to 30
		Hard	>30

Moisture

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

USCS Soil Classification Chart (ASTM D 2487)

Major Divisions			Symbols: Graph	Symbols: USCS	Typical Descriptions
Coarse Grained Soils: More than 50% of Material Retained on No. 200 Sieve	Gravel and Gravelly Soils: More than 50% of Coarse Fraction Retained on No. 4 Sieve	Clean Gravels (<5% fines)		GW	Well-Graded Gravel; Well-Graded Gravel with Sand
				GP	Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Gravels (5-12% fines)		GW-GM	Well-Graded Gravel with Silt; Well-Graded Gravel with Silt and Sand
				GW-GC	Well-Graded Gravel with Clay; Well-Graded Gravel with Clay and Sand
				GP-GM	Poorly Graded Gravel with Silt; Poorly Graded Gravel with Silt and Sand
				GP-GC	Poorly Graded Gravel with Clay; Poorly Graded Gravel with Clay and Sand
		Gravels with Fines (>12% fines)		GM	Silty Gravel; Silty Gravel with Sand
				GC	Clayey Gravel; Clayey Gravel with Sand
	Sand and Sandy Soils: More than 50% of Coarse Fraction Passing No. 4 Sieve	Sands with few Fines (<5% fines)		SW	Well-Graded Sand; Well-Graded Sand with Gravel
				SP	Poorly Graded Sand; Poorly Graded Sand with Gravel
		Sands (5-12% fines)		SW-SM	Well-Graded Sand with Silt Well-Graded Sand with Silt and Gravel
				SW-SC	Well-Graded Sand with Clay; Well-Graded Sand with Clay and Gravel
				SP-SM	Poorly Graded Sand with Silt; Poorly Graded Sand with Silt and Gravel
				SP-SC	Poorly Graded Sand with Clay; Poorly Graded Sand with Clay and Gravel
		Sands with Fines (>12% fines)		SM	Silty Sand; Silty Sand with Gravel
				SC	Clayey Sand; Clayey Sand with Gravel
Fine Grained Soils: More than 50% of Material Passing No. 200 Sieve	Silts			ML	Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
				MH	Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
	Silty Clay (based on Atterberg Limits)			CL-ML	Silty Clay; Silty Clay with Sand or Gravel; Gravelly or Sandy Silty Clay
	Clays			CL	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
				CH	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
	Organics			OL/OH	Organic Soil; Organic Soil with Sand or Gravel; Sandy or Gravelly Organic Soil
Highly Organic (>50% organic material)				PT	Peat - Decomposing Vegetation - Fibrous to Amorphous Texture

Minor Constituents

	Estimated Percentage
Sand, Gravel	
Trace	<5
Few	5 - 15
Cobbles, Boulders	
Trace	<5
Few	5 - 10
Little	15 - 25
Some	30 - 45

Soil Test Symbols

%F	Percent Passing No. 200 Sieve
AL	Atterberg Limits (%)
	Liquid Limit (LL)
	Water Content (WC)
	Plastic Limit (PL)
CA	Chemical Analysis
CAUC	Consolidated Anisotropic Undrained Compression
CAUE	Consolidated Anisotropic Undrained Extension
CBR	California Bearing Ratio
CIDC	Consolidated Drained Isotropic Triaxial Compression
CIUC	Consolidated Isotropic Undrained Compression
CK0DC	Consolidated Drained k0 Triaxial Compression
CK0DSS	Consolidated k0 Undrained Direct Simple Shear
CK0UC	Consolidated k0 Undrained Compression
CK0UE	Consolidated k0 Undrained Extension
CRSCN	Constant Rate of Strain Consolidation
DS	Direct Shear
DSS	Direct Simple Shear
DT	In Situ Density
GS	Grain Size Classification
HYD	Hydrometer
ILCN	Incremental Load Consolidation
K0CN	k0 Consolidation
kc	Constant Head Permeability
kf	Falling Head Permeability
MD	Moisture Density Relationship
OC	Organic Content
OT	Tests by Others
P	Pressuremeter
PID	Photoionization Detector Reading
PP	Pocket Penetrometer
SG	Specific Gravity
TRS	Torsional Ring Shear
TV	Torvane
UC	Unconfined Compression
UUC	Unconsolidated Undrained Triaxial Compression
VS	Vane Shear
WC	Water Content (%)

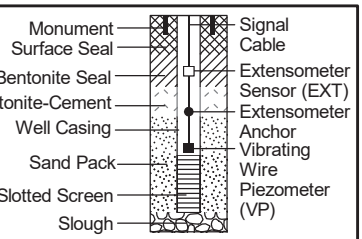
Groundwater Indicators

- Groundwater Level on Date or At Time of Drilling (ATD)
- Groundwater Level on Date Measured in Piezometer
- Groundwater Seepage (Test Pits)

Sample Symbols

- 1.5" I.D. Split Spoon
- 3.0" I.D. Split Spoon
- Modified California Sampler
- Rock Core Run
- Sonic Core
- Thin-walled Sampler
- Grab
- Cuttings
- Push Probe

Well Symbols



Date Started: 01/26/2024 Date Completed: 01/26/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,858.27 E: 1,226,781.59 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 117.17 feet (NAVD 88) Total Depth: 110.0 feet Depth to Groundwater: 50 feet

Comments: Grab groundwater samples collected from 52 to 57 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.		0
115	5					0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		5
			50in.	60							
110	10					0.1	NS				10
105	15		100in.	120	S-1	0.2	NS				15
100	20					0.1	NS				20
95	25		40in.	60	S-2	0.1 0.1	NS NS				25
90			40in.	60							
85	30					0.1	NS				30
	35		100in.	120		0.1	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		35
80											

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-1

Figure **A**
Sheet **1 of 3**

Date Started: 01/26/2024 | Date Completed: 01/26/2024 | Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens | Checked by: H. Good | Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,858.27 E: 1,226,781.59 (WA State Plane N, NAD 83, ft.) | Hole Diameter: 8 inches | Well Casing Diameter: NA

Ground Surface Elevation: 117.17 feet (NAVD 88) | Total Depth: 110.0 feet | Depth to Groundwater: 50 feet

Comments: Grab groundwater samples collected from 52 to 57 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level
	40				0.1	NS	SP	POORLY GRADED SAND (SP), moist, gray-brown.	
75									
	45	100in.	120						
70								becomes wet	
	50			S-3	0.2	NS		Perched aquifer at 50 ft.	ATD
					0.2	NS			
65		50in.	60	S-5	0.2	NS			
				S-4	0.3	NS			
	55				0.2	NS	CL	LEAN CLAY (CL), moist, gray.	
60		50in.	60						
	60				0.9	NS			
55									
	65	120in.	120						
50					0.2	NS	SP	POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.	
	70				0.1	NS	SP	POORLY GRADED SAND (SP), moist, gray-brown.	
45									
	75	110in.	120						
40									

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

Date Started: 01/26/2024 Date Completed: 01/26/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,858.27 E: 1,226,781.59 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 117.17 feet (NAVD 88) Total Depth: 110.0 feet Depth to Groundwater: 50 feet

Comments: Grab groundwater samples collected from 52 to 57 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
80	35					0.3	NS		POORLY GRADED SAND (SP), moist, gray-brown. *(continued)*		80
85	30		100in.	120							85
90	25					0.1	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		90
									POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		
95	20		100in.	120							95
100	15					0.2	NS				100
105	10		105in.	120					becomes wet, petroleum-like odor		105
					S-6	723	SS		Sea level aquifer at 107 ft.	ATD	
110	5								Bottom of Borehole at 110.0 feet.		110
115	0										115

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-1

Figure **A**
Sheet **3 of 3**

Date Started: 01/24/2024	Date Completed: 01/25/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: Z. Stephens	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,895.30 E: 1,226,694.40 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 8 inches	Well Casing Diameter: NA
Ground Surface Elevation: 118.00 feet (NAVD 88)		Total Depth: 150.0 feet	Depth to Groundwater: 50 feet
Comments: Grab groundwater samples collected from 50 to 55 ft below ground surface.			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.		0
115	5		55in.	60	S-1.5	0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		5
110	10					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.		10
105	15		90in.	120	S-2	0.0					15
100	20					0.0	NS				20
95	25		90in.	120	S-3						25
90	30					0.1	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		30
85	35		90in.	120							35
									SANDY SILT (ML), moist, gray-brown.		
80						0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-2

Figure **A**
Sheet **1 of 4**

Date Started: 01/24/2024 Date Completed: 01/25/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,895.30 E: 1,226,694.40 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 118.00 feet (NAVD 88) Total Depth: 150.0 feet Depth to Groundwater: 50 feet

Comments: Grab groundwater samples collected from 50 to 55 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
40	40					0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown. *(continued)*		40
75											
45	45		90in.	120					POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		45
70											
50	50				S-4	0.0	NS		grades to no gravel, wet	ATD	50
									Perched aquifer at 50 ft.		
					S-6	0.0	NS				
65					S-5	0.9	NS		LEAN CLAY (CL), moist, gray.		
55	55		100in.	120					SANDY SILT (ML), moist, gray-brown.		55
60	60					0.1	NS				60
55											
65	65		100in.	120							65
50						0.0			POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		
70	70					0.0	NS		grades to no gravel		70
45											
75	75		110in.	120							75
40											

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-2

Figure **A**
Sheet **2 of 4**

Date Started: 01/24/2024 Date Completed: 01/25/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,895.30 E: 1,226,694.40 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 118.00 feet (NAVD 88) Total Depth: 150.0 feet Depth to Groundwater: 50 feet

Comments: Grab groundwater samples collected from 50 to 55 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
80	80					0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown. *(continued)*		80
35											
85	85		100in.	120							85
30											
90	90					0.0	NS				90
25											
95	95		110in.	120							95
20											
100	100					0.0					100
15									Sea level aquifer at 103 ft.	ATD	
									POORLY GRADED SAND WITH GRAVEL (SP), wet, gray-brown.		
105	105		105in.	120	S-7	2600.0	SS				105
10					S-8	37.0	SS				
110	110					1400.0	SS		POORLY GRADED SAND (SP), wet, gray-brown.		110
5											
115	115		85in.	120							115
0											

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-2

Figure **A**
Sheet **3 of 4**

Date Started: 01/24/2024 | Date Completed: 01/25/2024 | Contractor/Crew: Anderson Environmental Contracting, LLC / John
Logged by: Z. Stephens | Checked by: H. Good | Rig Model/Type: TSi 150CC / Track-mounted drill rig
Location: N: 372,895.30 E: 1,226,694.40 (WA State Plane N, NAD 83, ft.) | Hole Diameter: 8 inches | Well Casing Diameter: NA
Ground Surface Elevation: 118.00 feet (NAVD 88) | Total Depth: 150.0 feet | Depth to Groundwater: 50 feet
Comments: Grab groundwater samples collected from 50 to 55 ft below ground surface.

Elevation (feet)	Depth (feet)	Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
	120								POORLY GRADED SAND (SP), wet, gray-brown. *(continued)*		120
-5											
	125		0in.	120							125
-10											
	130					1.7	SS				130
-15											
	135		70in.	120							135
-20											
	140										140
-25					S-9	4.5	SS				
	145		115in.	120					SANDY SILT (ML), moist, gray-brown.		145
-30					S-10	1.9	SS		LEAN CLAY (CL), moist, gray.		
	150								Bottom of Borehole at 150.0 feet.		150
-35											
	155										155
-40											

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

Date Started: 01/23/2024 Date Completed: 01/24/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,956.19 E: 1,226,781.56 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 118.00 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 55 feet

Comments: Grab groundwater samples collected from 55 to 60 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
118	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.		0
115	5					0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		5
110	10		45in.	60		0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		10
105	15		84in.	120	S-1	0.1	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		15
100	20					0.1	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		20
95	25		90in.	120	S-2	0.1			POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		25
90	30					0.1	NS				30
85	35		50in.	60		0.1	NS				35
80			48in.	60							

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-3

Figure **A**
Sheet **1 of 3**

Date Started: 01/23/2024	Date Completed: 01/24/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: Z. Stephens	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,956.19 E: 1,226,781.56 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 8 inches	Well Casing Diameter: NA
Ground Surface Elevation: 118.00 feet (NAVD 88)		Total Depth: 120.0 feet	Depth to Groundwater: 55 feet
Comments: Grab groundwater samples collected from 55 to 60 ft below ground surface.			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
78	40					0.0	NS		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moist, gray-brown.		40
73	45		72in.	120		0.0	NS				45
68	50								SANDY SILT (ML), moist, gray-brown.		50
63	55		80in.	120	S-3	0.0	NS		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moist, gray-brown.	ATD	55
					S-5	0.0			Perched aquifer at 55 ft.		
					S-4	0.0			POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		
58	60					0.0	NS		SANDY SILT (ML), moist, gray-brown.		60
			55in.	60					LEAN CLAY (CL), moist, gray.		
53	65					0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		65
			48in.	60							
48	70					0.0	NS				70
43	75		110in.	120							75

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-3

Figure **A**
Sheet **2 of 3**

Date Started: 01/23/2024	Date Completed: 01/24/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: Z. Stephens	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,956.19 E: 1,226,781.56 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 8 inches	Well Casing Diameter: NA
Ground Surface Elevation: 118.00 feet (NAVD 88)		Total Depth: 120.0 feet	Depth to Groundwater: 55 feet

Comments: Grab groundwater samples collected from 55 to 60 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
80	0					0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		0
35	30		110in.	120							30
85	35										35
90	40					0.1	NS		POORLY GRADED SAND (SP), moist, gray-brown.		40
25	45		105in.	120							45
95	50					0.0			POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		50
20	55										55
100	60					750.0	SS				60
15	65								becomes wet, petroleum-like odor		65
105	70		110in.	120	S-6				Sea level aquifer at 105 ft.	ATD	70
10	75										75
110	80					0.6	NS				80
5	85										85
115	90		96in.	120							90
0	95										95

Bottom of Borehole at 120.0 feet.

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH	Project: Whidbey Marine RI-FS Location: Puget Sound, Washington Project No.: 0204475-001	Sonic Core Log **HA-3**	Figure **A** Sheet **3 of 3**

Date Started: 01/29/2024 Date Completed: 01/29/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,869.67 E: 1,226,696.33 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 117.78 feet (NAVD 88) Total Depth: 110.0 feet Depth to Groundwater: 100 feet

Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
117.78	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.		0
115	5					0.1	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		5
110	10		50in.	60		0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		10
						0.2	NS				
105	15		110in.	120	S-1	0.5	NS				15
100	20					0.2	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		20
95	25		50in.	60					POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		25
					S-2	0.2	NS				
						0.1	NS				
90	30		100in.	120					POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		30
85	35					0.1	NS				35
80											

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-4

Figure **A**
Sheet **1 of 3**

Date Started: 01/29/2024	Date Completed: 01/29/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: Z. Stephens	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,869.67 E: 1,226,696.33 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 8 inches	Well Casing Diameter: NA
Ground Surface Elevation: 117.78 feet (NAVD 88)		Total Depth: 110.0 feet	Depth to Groundwater: 100 feet
Comments:			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
75	40								POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown. *(continued)*		40
			100in.	120		0.2			POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.		
70	45					0.2	NS		grades to no gravel		45
			85in.	60							
65	50					0.2	NS				50
			45in.	60	S-3	0.7	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.		
60	55										55
					S-4	390.0	SS				
55	60		100in.	120	S-5	2.4	NS				60
									LEAN CLAY (CL), moist, gray.		
50	65					0.3	NS		SANDY SILT (ML), moist, gray-brown.		65
									POORLY GRADED SAND (SP), moist, gray-brown.		
45	70		55in.	60		0.2	NS				70
40	75		110in.	120							75

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

Date Started: 01/29/2024 Date Completed: 01/29/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,869.67 E: 1,226,696.33 (WA State Plane N, NAD 83, ft.) Hole Diameter: 8 inches Well Casing Diameter: NA

Ground Surface Elevation: 117.78 feet (NAVD 88) Total Depth: 110.0 feet Depth to Groundwater: 100 feet

Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Depth (feet)
80	80					0.2	NS		POORLY GRADED SAND (SP), moist, gray-brown. *(continued)*		80
35											
85	85		110in.	120					POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.		85
30											
90	90					0.3	NS		POORLY GRADED SAND (SP), moist, gray-brown.		90
25											
95	95		105in.	120							95
20											
100	100				S-6	37.8	SS		becomes wet	ATD	100
15											
105	105		110in.	120							105
10											
110	110								Bottom of Borehole at 110.0 feet.		110
5											
115	115										115
0											

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core Log
HA-4

Figure **A**
Sheet **3 of 3**

Date Started: 01/09/2024	Date Completed: 01/11/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: A. Nakahara	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,681.70 E: 1,226,547.13 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 6 inches	Well Casing Diameter: ID: 2 inches
Ground Surface Elevation: 117.94 feet (NAVD 88)		Total Depth: 120.0 feet	Depth to Groundwater: 104.2 feet
Comments: Well Tag ID: BQG968			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), loose, moist, brown.			0
115	5								POORLY GRADED SAND WITH SILT (SP-SM), moist, light brown to gray.			5
110	10		60in.	60		0.6	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.			10
105	15				S-1	0.0	NS					15
100			60in.	60		0.0	NS					
	20				S-2	0.2	SS		SANDY SILT WITH GRAVEL (ML), moist, dark brown.			20
95						0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			
	25		96in.	120								25
90	30						NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, light brown.			30
85												
	35		84in.	120								35
80									POORLY GRADED SAND WITH GRAVEL (SP), moist, light gray-brown.			

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-19D

Figure **A**
Sheet **1 of 3**

Date Started: 01/09/2024 Date Completed: 01/11/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,681.70 E: 1,226,547.13 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 117.94 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 104.2 feet

Comments: Well Tag ID: BQG968

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
	40					0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, light gray-brown. *(continued)*			40
75					S-3							
	45		120in.	120								45
70					S-4	0.9	NS					
	50					0.9	NS		POORLY GRADED SAND (SP), moist, gray-brown.			50
65												
	55		72in.	120								55
60												
	60					0.0	NS					60
55												
	65		60in.	120								65
50												
	70					0.0	NS					70
45									POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moist, gray.			
	75		96in.	120	S-5	0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			75
40												

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-19D

Figure **A**
Sheet **2 of 3**

Date Started: 01/09/2024 Date Completed: 01/11/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,681.70 E: 1,226,547.13 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 117.94 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 104.2 feet

Comments: Well Tag ID: BQG968

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
80	0					0.0	NS		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moist, gray.			0
85	5		96in.	120		0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.			5
90	10					0.0	NS					10
95	15		108in.	120								15
100	20								POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			20
105	25		60in.	60	S-6	0.1	NS			ATD		25
						1.9	NS		POORLY GRADED SAND (SP), wet, gray-brown.			
110	30		60in.	60		0.0	NS					30
115	35		108in.	120								35

Bottom of Borehole at 120.0 feet.

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-19D

Figure **A**
Sheet **3 of 3**

Date Started: 01/10/2024	Date Completed: 01/15/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: A. Nakahara	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,613.56 E: 1,226,753.72 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 6 inches	Well Casing Diameter: ID: 2 inches
Ground Surface Elevation: 118.55 feet (NAVD 88)		Total Depth: 115.0 feet	Depth to Groundwater: 103.75 feet
Comments: Well Tag ID: BQG969			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
118.55	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND, moist, brown, fine to medium sand.			0
115	5	60in.		60		0.0	NS		grades to gray-brown			5
110	10					0.6	NS					10
105	15	108in.		120	S-1	0.0	NS					15
100	20					0.0	NS		WELL-GRADED SAND WITH GRAVEL (SW), moist, gray-brown.			20
95	25	96in.		120	S-2	0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			25
90	30								POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moist, gray-brown.			30
85	35	84in.		120								35
80												

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-20D

Figure **A**
Sheet **1 of 3**

Date Started: 01/10/2024 Date Completed: 01/15/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,613.56 E: 1,226,753.72 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 118.55 feet (NAVD 88) Total Depth: 115.0 feet Depth to Groundwater: 103.75 feet

Comments: Well Tag ID: BQG969

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
40	40								no recovery			40
75	45		30in.	60	S-3	0.0	NS		SILTY SAND WITH GRAVEL (SM), moist, gray-brown, occasional layers of silt.			45
						0.0	NS					
					S-4							
70	50		48in.	60					POORLY GRADED SAND (SP), few cobbles, moist, gray-brown.			50
						0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			
65	55		60in.	60								55
						0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			
60	60				S-5	0.0			SANDY SILT (ML), moist, gray-brown, light iron oxide staining.			60
			102in.	120								
55	65					0.2	NS		POORLY GRADED SAND (SP), moist, gray-brown.			65
50	70		102in.	120								70
45	75					0.1	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			75
						0.0			POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.			
40			60in.	60								

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-20D

Figure **A**
Sheet **2 of 3**

Date Started: 01/10/2024 Date Completed: 01/15/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,613.56 E: 1,226,753.72 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 118.55 feet (NAVD 88) Total Depth: 115.0 feet Depth to Groundwater: 103.75 feet

Comments: Well Tag ID: BQG969

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
80	0					0.0	NS		SILTY SAND (SM), moist, gray-brown.			0
35												
85	5		120in.	120								5
30	10					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			10
90						0.0	NS					
25	15		60in.	60								15
95						0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			
						0.0	NS					
20	20								POORLY GRADED SAND (SP), moist, gray-brown.			20
100			90in.	120								
15	25									ATD		25
105						0.0	NS		SILTY SAND (SM), wet, gray-brown.			
					S-6							
10	30								POORLY GRADED SAND WITH SILT (SP-SM), wet, gray-brown.			30
110			78in.	120								
5	35											35
115									Bottom of Borehole at 115.0 feet.			
0	40											40

General Notes:

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4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-20D

Figure **A**
Sheet **3 of 3**

Date Started: 01/16/2024 Date Completed: 01/16/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,772.36 E: 1,226,442.30 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 116.58 feet (NAVD 88) Total Depth: 115.0 feet Depth to Groundwater: 102 feet

Comments: Well Tag ID: BQG970

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
	0								Hand augered to 5 ft bgs.			0
115	5					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			5
110	10		36in.	60					POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.			10
105	15		120in.	120	S-1	0.0	NS					15
100						0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, moist, gray-brown.			
95	20				S-2	31.6	NS		grades to no gravel			20
90	25		102in.	120	S-3	0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			25
85	30					0.2	NS					30
80	35		96in.	120		0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			35

General Notes:

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4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-21D

Figure **A**
Sheet **1 of 3**

Date Started: 01/16/2024	Date Completed: 01/16/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: A. Nakahara	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,772.36 E: 1,226,442.30 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 6 inches	Well Casing Diameter: ID: 2 inches
Ground Surface Elevation: 116.58 feet (NAVD 88)		Total Depth: 115.0 feet	Depth to Groundwater: 102 feet
Comments: Well Tag ID: BQG970			

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
75	40					0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown. *(continued)*			40
						0.1	NS		POORLY GRADED SAND (SP), moist, gray-brown, occasional lenses of silt.			
70	45		108in.	120								45
					S-4	0.2	NS					
65	50											50
									POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, moist, gray-brown.			
					S-5	0.0	NS					
60	55		108in.	120		0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			55
									lense of silt at 58 ft			
						0.0	NS					
55	60				S-6	0.0	NS		lense of silt at 61 ft			60
50	65		114in.	120								65
									POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			
45	70					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			70
40	75		108in.	120		0.0	NS					75

General Notes:
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4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-21D

Figure **A**
Sheet **2 of 3**

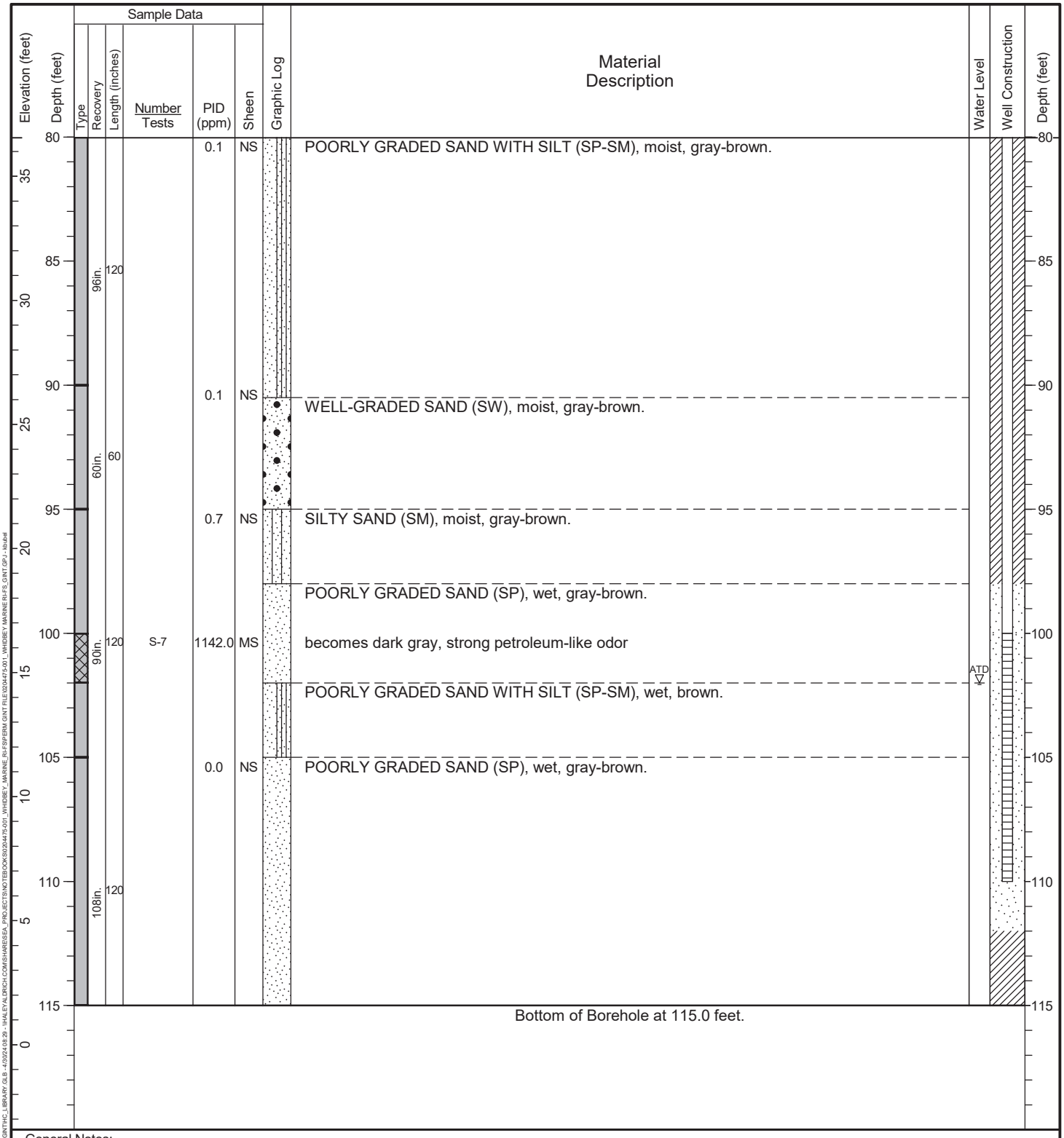
Date Started: 01/16/2024 Date Completed: 01/16/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,772.36 E: 1,226,442.30 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 116.58 feet (NAVD 88) Total Depth: 115.0 feet Depth to Groundwater: 102 feet

Comments: Well Tag ID: BQG970



General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-21D

Figure **A**
Sheet **3 of 3**

Date Started: 01/17/2024 Date Completed: 01/19/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,701.26 E: 1,226,759.57 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 119.40 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 106.5 feet

Comments: Well Tag ID: BQG971 Grab groundwater samples collected from 64 to 69 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.			0
115	5					0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			5
			54in.	60					POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.			
110	10					0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			10
105	15		96in.	120	S-1	0.0	NS					15
100	20					0.1	NS					20
95	25		84in.	120	S-2	0.0	NS					25
90	30					0.2	NS		SILTY SAND (SM), moist, light gray.			30
									POORLY GRADED SAND (SP), moist, gray-brown.			
85	35		108in.	120								35
80						0.1	NS		WELL-GRADED SAND WITH SILT AND GRAVEL (SW-SM), moist, light gray.			

General Notes:

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4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

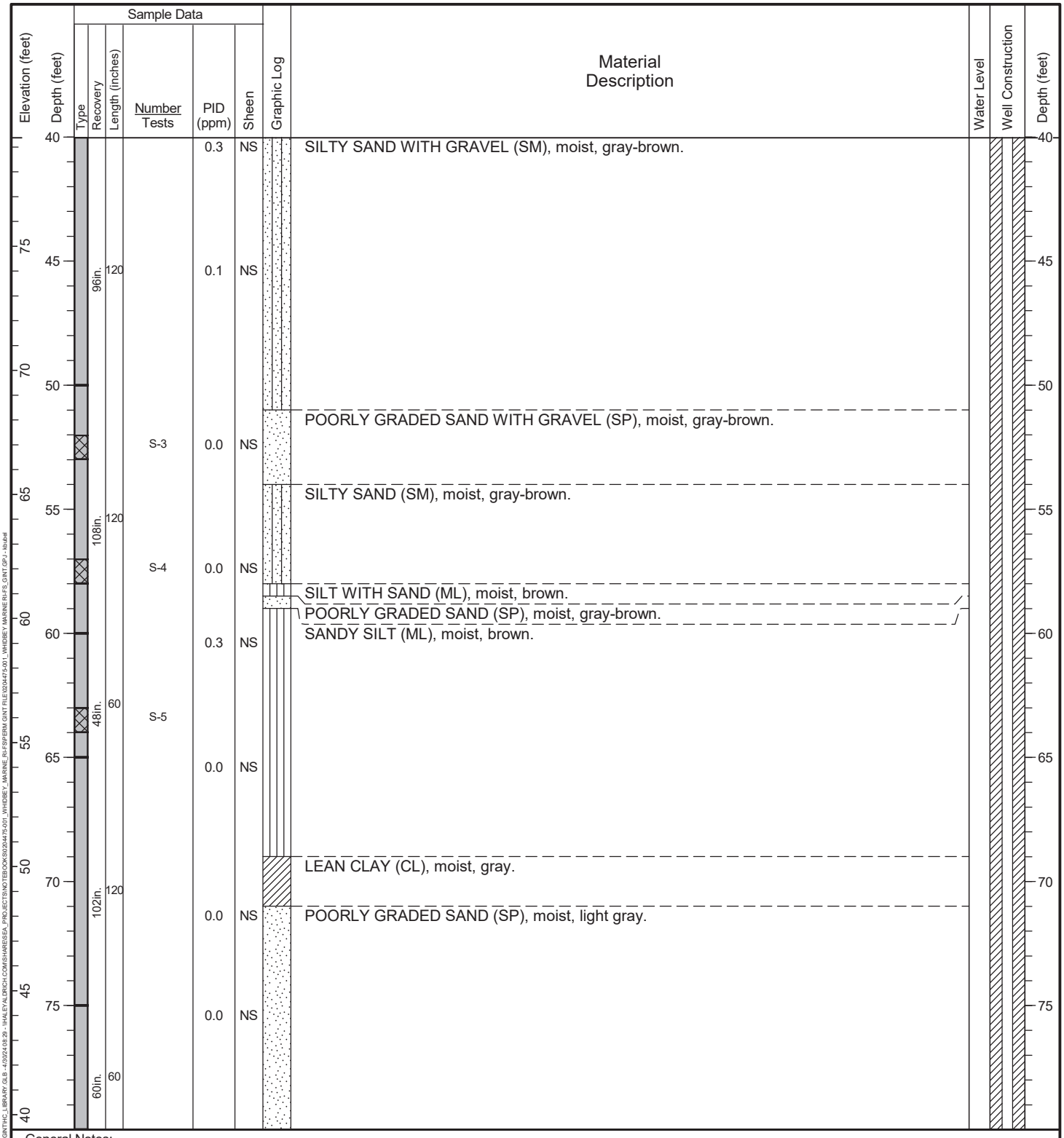
HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-22D

Figure **A**
Sheet **1 of 3**

Date Started: 01/17/2024	Date Completed: 01/19/2024	Contractor/Crew: Anderson Environmental Contracting, LLC / John	
Logged by: A. Nakahara	Checked by: H. Good	Rig Model/Type: TSi 150CC / Track-mounted drill rig	
Location: N: 372,701.26 E: 1,226,759.57 (WA State Plane N, NAD 83, ft.)		Hole Diameter: 6 inches	Well Casing Diameter: ID: 2 inches
Ground Surface Elevation: 119.40 feet (NAVD 88)		Total Depth: 120.0 feet	Depth to Groundwater: 106.5 feet
Comments: Well Tag ID: BQG971 Grab groundwater samples collected from 64 to 69 ft below ground surface.			



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HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-22D

Figure **A**
Sheet **2 of 3**

Date Started: 01/17/2024 Date Completed: 01/19/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,701.26 E: 1,226,759.57 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 119.40 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 106.5 feet

Comments: Well Tag ID: BQG971 Grab groundwater samples collected from 64 to 69 ft below ground surface.

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
35	80					0.4	NS		POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, moist, gray-brown.			80
	85		108in.	120								85
30	90					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			90
25	95		120in.	120		0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			95
20	100											100
15	105		84in.	120	S-6	0.0	NS		POORLY GRADED SAND (SP), wet, gray-brown.	▽ 1/19/2024		105
10	110								becomes gray			110
5	115		60in.	60	S-7	0.4	NS					115
0			60in.	60	S-8	52.5	NS		moderate petroleum-like odor			

Bottom of Borehole at 120.0 feet.

General Notes:

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HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-22D

Figure **A**
Sheet **3 of 3**

Date Started: 01/19/2024 Date Completed: 01/22/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara / Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,772.92 E: 1,226,772.62 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 118.90 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 103.5 feet

Comments: Well Tag ID: BQG972

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
115	0								Vacuum excavated to 5 ft bgs. Cuttings indicate: POORLY GRADED SAND WITH GRAVEL (SP), moist, brown.			0
	5					0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, light brown, trace organics.			5
110			60in.	60					grades to no gravel			
	10					0.0	NS					10
105												
	15		96in.	120	S-1	0.0	NS		POORLY GRADED SAND WITH GRAVEL (SP), moist, gray-brown.			15
100												
	20					0.0	NS					20
									POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			
95	25		90in.	120	S-2	0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown.			25
90	30											30
			0in.	60								
85												
	35					0.0	NS					35
80			60in.	60								

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HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-23D

Figure **A**
Sheet **1 of 3**

Date Started: 01/19/2024 Date Completed: 01/22/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara / Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,772.92 E: 1,226,772.62 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 118.90 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 103.5 feet

Comments: Well Tag ID: BQG972

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number / Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
40	40					0.0	NS		POORLY GRADED SAND (SP), moist, gray-brown. *(continued)* grades to trace gravel			40
75	45		48in.	60		0.0	NS					45
70	50		60in.	60		0.0	NS		SILTY SAND (SM), moist, gray-brown.			50
65	55		84in.	120					POORLY GRADED SAND (SP), moist, gray-brown.			55
60	60				S-3	0.0						60
55	60		60in.	60	S-4	0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			60
					S-5				SANDY SILT (ML), moist, gray-brown.			
55	65					0.1	NS		LEAN CLAY (CL), moist, gray-brown.			65
50	70		60in.	60		0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			70
45	75		120in.	120					SILTY SAND (SM), moist, gray-brown.			75
40									POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.			

General Notes:

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2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
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HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-23D

Figure **A**
Sheet **2 of 3**

Date Started: 01/19/2024 Date Completed: 01/22/2024 Contractor/Crew: Anderson Environmental Contracting, LLC / John

Logged by: A. Nakahara / Z. Stephens Checked by: H. Good Rig Model/Type: TSi 150CC / Track-mounted drill rig

Location: N: 372,772.92 E: 1,226,772.62 (WA State Plane N, NAD 83, ft.) Hole Diameter: 6 inches Well Casing Diameter: ID: 2 inches

Ground Surface Elevation: 118.90 feet (NAVD 88) Total Depth: 120.0 feet Depth to Groundwater: 103.5 feet

Comments: Well Tag ID: BQG972

Elevation (feet)	Depth (feet)	Sample Data: Type	Recovery	Length (inches)	Number Tests	PID (ppm)	Sheen	Graphic Log	Material Description	Water Level	Well Construction	Depth (feet)
80	80					0.0	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown. *(continued)*			80
35												
85	85		110in.	120								85
30												
90	90					0.0	NS		POORLY GRADED SAND (SP), trace gravel, moist, gray-brown.			90
25												
95	95		120in.	120								95
20												
100	100					0.1	NS		POORLY GRADED SAND WITH SILT (SP-SM), moist, gray-brown.	ATD		100
15												
105	105		120in.	120								105
10						55.9	SS		POORLY GRADED SAND (SP), wet, gray-brown.			
110	110					54.8	SS					110
5												
115	115		120in.	120								115
0									Bottom of Borehole at 120.0 feet.			

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are surveyed.

HALEY ALDRICH

Project: Whidbey Marine RI-FS
Location: Puget Sound, Washington
Project No.: 0204475-001

Sonic Core and Monitoring Well Log
MW-23D

Figure **A**
Sheet **3 of 3**

Haley & Aldrich, Inc.
600 South Meyer Ave.
Suite 100
Tucson, AZ 85701
520.289.8621

Data Usability Summary Report

Project Name: Whidbey Island

Project Description: Groundwater Samples

Sample Date(s): 26 through 28 September 2023

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, Washington

Validation Performed by: Kristina Ilina

Validation Reviewed by: Katherine Miller

Validation Date: 13 October 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDGs) listed. This DUSR is organized into the following sections:

1. Sample Delivery Group
2. Explanations
3. Glossary
4. Abbreviations
5. Qualifiers

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Organic Data Review.
- NFG for Inorganic Data Review.

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures. The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Group

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 309422, dated 6 October 2023,
- 309479, dated 9 October 2023, and
- 309532, dated 11 October 2023.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Samples for E300, SM2320B, RSK175, SM4500-NH3G, SM4500-S2-D, and SM5310C analysis were subcontracted to Fremont Analytical – Seattle, WA.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Custody seals were not used on the sample cooler(s).

Analyses were performed on the samples listed in Table 1. Method holding times are listed in Table 2.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues, such as internal standard exceedances and initial calibration verification and/or continuing calibration verification exceedances. Since these additional quality control issues were not required for the project's DQOs, these quality control issues were not reviewed.

- SDG 309479 and 309532: The 8260D calibration standard failed the acceptance criteria for acetone. No qualification necessary.
- SDG 309532: The chromatographic pattern does not resemble the fuel standard used for quantitation for diesel-range organics (DRO) for all samples in the SDG. No qualification necessary.
- The concentration of the nitrate exceeded the calibration range for sample MW-15D-GW-20230927. Qualified with J.

1.3 MULTIPLE SAMPLE RESULTS

The laboratory reported multiple results for the samples listed below. The validator chose the results that best met the DQOs of the project.

Lab ID	Analysis Date/Time	Method	Analyte	Qualification
2309476-001B 2309476-002B	9/28/2023 10:04 9/28/2023 10:27	E300	Nitrate (as N)	The laboratory reanalyzed the sample due to a concentration exceeding range of the calibration. The original results are marked non-reportable and the reanalysis results are accepted.

Lab ID	Analysis Date/Time	Method	Analyte	Qualification
309479-01 309479-02 309479-03	9/29/2023 16:55 9/29/2023 17:27 9/29/2023 18:02	SW8270E	1-Methylnaphthalene 2-Methylnaphthalene Naphthalene	The sample required the dilution due to results exceedance. The laboratory marked the original results non-reportable and the reanalysis results were accepted.
309479-03 309532-02 309532-04 309532-06	10/2/2023 13:08 10/3/2023 10:33 10/3/2023 12:42 10/3/2023 13:15	SW8270E	Several analytes	The laboratory selected the analytes to be reported from two batches due to the high dilutions

1.4 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol, with the following exceptions:

Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
E300	Water	48 hours	Cool to ≤ 6°C	The following samples were analyzed outside the holding time and qualified J: MW-14D-GW-20230926 MW-18D-GW-20230926

1.5 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified. Dilution of the project samples were required to bring calibration of target analytes within calibration range, matrix interference, foaming at the time of purging, or abundance of non-target analytes.

1.6 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control limits, with the following exceptions:

Method	Sample ID	Lab ID	Surrogate	Dilution	%R	Qualification
SW8270E	MW-9D-20230928	309532-04	2,4,6-Tribromophenol	200x	0%	None, dilution > 5x
SW8270E	MW-12D-20230928	309532-05	2,4,6-Tribromophenol	100x	173%	None, dilution > 5x
SW8270E	FD-01-20230928	309532-06	2,4,6-Tribromophenol	200x	0%	None, dilution > 5x

1.7 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits, with the following exceptions:

Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
LCS	E300	41641	Sulfate	114%	NA	None, within NFG limits

1.8 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike/Matrix Spike Duplicate Sample Client ID	Method(s)
309422-01	MW-14D-GW-20230926	SW8260D
2309476-002C	MW-18D-GW-20230926	SM4500-NH3G
2309476-001D	MW-14D-GW-20230926	SM4500-S2-D
2309483-002B	MW-8S-GW-20230927	SM5310C
309532-05	MW-12D-20230928	SW6020B
309532-01	MW-4S-20230928	SW6020B
2309528-003B	MW-9D-20230928	SM4500-NH3G

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits, with the following exceptions:

Sample Type	Method	Parent Sample	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD	SM4500-NH3G	MW-18D-GW-20230926	Nitrogen, Ammonia	0%/0%	J-/R	MW-14D-GW-20230926 MW-18D-GW-20230926
MS/MSD	SW6020B	MW-12D-20230928	Manganese	147%/0%	NA	None, native sample > 4x the spike added
MS/MSD	SM4500-NH3G	MW-9D-20230928	Nitrogen, Ammonia	0%/0%	J-/R	MW-12D-20230928 MW-4S-20230928 MW-6S-20230928 MW-9D-20230928 FD-01-20230928

1.9 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with the following exceptions:

SDG	Blank Type	Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
309422	MB	NA	1,2-Dibromoethane (EDB)	0.010	NA	None, samples are ND

***Note**:*
µg/L = micrograms per liter

1.10 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The following sample(s) were used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than five times the RL). Any exceptions are noted below and qualified.

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
309422-01	MW-14D-GW-20230926	NWTPH-GX
2309476-001A	MW-14D-GW-20230926	RSK175
2309476-001B	MW-14D-GW-20230926	SM2320B
2309476-001D	MW-14D-GW-20230926	SM4500-S2-D
2309476-002C	MW-18D-GW-20230926	SM4500-NH3G
309479-04	MW-15D-GW-20230927	NWTPH-GX
2309483-002B	MW-8S-GW-20230927	SM5310C
309532-03	MW-6S-20230928	NWTPH-GX
2309528-002A	MW-6S-20230928	SM2320B
2309528-003B	MW-9D-20230928	SM4500-NH3G
2309528-005D	FD-01-20230928	RSK175

The following sample(s) were used for field duplicate analysis. The RPD comparison for detections in either the parent or duplicate sample(s) is shown below. RPDs were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than five times the RL). Any exceptions are noted below and qualified.

Primary Sample ID	Duplicate Sample ID	Method(s)
MW-9D-20230928	FD-01-20230928	NWTPH-DX, NWTPH-GX, SM2540D, SW6020B, SW8260D, SW8270E

Method	Analyte	Units	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
			MW-9D-20230928	FD-01-20230928		
NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO	µg/L	7,500	1,900	119.1%	J/UJ, Abs Diff > RL
SM2540D	Total Suspended Solids (TSS)	mg/L	18	49	NA	J/UJ, Abs Diff > RL
SW6020B	Lead, Dissolved	µg/L	ND	2.72	NA	J/UJ, Abs Diff > RL

Note
mg/L = milligrams per liter

1.11 PRECISION AND ACCURACY

Refer to Section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable, as no data was rejected except for rejected data noted in Table 3. A summary of qualifiers applied to this dataset is shown in Table 3.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the %R of the compounds.
- E 1.3 Laboratory Control Samples
  - The LCS/LCSD analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - MS/MSD data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post-digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the RPD found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the %R of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L micrograms per liter
  - mg/kg milligrams per kilogram
  - mg/L milligrams per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - µmhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compound
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

5. Qualifiers

The qualifiers below are from the USEPA NFG and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	LCS/LCSD RPD was outside the control limit.
Q	MS recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency (USEPA), 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.

2. USEPA, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Attachments:

Table 1 – Sample Management
Table 2 – Method Description
Table 3 – Summary of Qualifiers

TABLE 1
SAMPLE MANAGEMENT
WHIDBEY ISLAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)
MW-14D-GW-20230926	N	2309476-001A	09/26/2023	WG	C
MW-14D-GW-20230926	N	2309476-001B	09/26/2023	WG	A, B
MW-14D-GW-20230926	N	2309476-001C	09/26/2023	WG	D, E
MW-14D-GW-20230926	N	2309476-001D	09/26/2023	WG	F
MW-18D-GW-20230926	N	2309476-002A	09/26/2023	WG	C
MW-18D-GW-20230926	N	2309476-002B	09/26/2023	WG	A, B
MW-18D-GW-20230926	N	2309476-002C	09/26/2023	WG	D, E
MW-18D-GW-20230926	N	2309476-002D	09/26/2023	WG	F
MW-17D-GW-20230927	N	2309483-001A	09/27/2023	WG	A, B
MW-17D-GW-20230927	N	2309483-001B	09/27/2023	WG	D, E
MW-17D-GW-20230927	N	2309483-001C	09/27/2023	WG	F
MW-17D-GW-20230927	N	2309483-001D	09/27/2023	WG	C
MW-8S-GW-20230927	N	2309483-002A	09/27/2023	WG	A, B
MW-8S-GW-20230927	N	2309483-002B	09/27/2023	WG	D, E
MW-8S-GW-20230927	N	2309483-002C	09/27/2023	WG	F
MW-8S-GW-20230927	N	2309483-002D	09/27/2023	WG	C
MW-13D-GW-20230927	N	2309483-003A	09/27/2023	WG	A, B
MW-13D-GW-20230927	N	2309483-003B	09/27/2023	WG	D, E
MW-13D-GW-20230927	N	2309483-003C	09/27/2023	WG	F
MW-13D-GW-20230927	N	2309483-003D	09/27/2023	WG	C
MW-15D-GW-20230927	N	2309483-004A	09/27/2023	WG	A, B
MW-15D-GW-20230927	N	2309483-004B	09/27/2023	WG	D, E
MW-15D-GW-20230927	N	2309483-004C	09/27/2023	WG	F
MW-15D-GW-20230927	N	2309483-004D	09/27/2023	WG	C
MW-16D-GW-20230927	N	2309483-005A	09/27/2023	WG	A, B
MW-16D-GW-20230927	N	2309483-005B	09/27/2023	WG	D, E
MW-16D-GW-20230927	N	2309483-005C	09/27/2023	WG	F
MW-16D-GW-20230927	N	2309483-005D	09/27/2023	WG	C
MW-4S-20230928	N	2309528-001A	09/28/2023	WG	A, B
MW-4S-20230928	N	2309528-001B	09/28/2023	WG	D, E
MW-4S-20230928	N	2309528-001C	09/28/2023	WG	F
MW-4S-20230928	N	2309528-001D	09/28/2023	WG	C
MW-6S-20230928	N	2309528-002A	09/28/2023	WG	A, B
MW-6S-20230928	N	2309528-002B	09/28/2023	WG	D, E
MW-6S-20230928	N	2309528-002C	09/28/2023	WG	F
MW-6S-20230928	N	2309528-002D	09/28/2023	WG	C
MW-9D-20230928	N	2309528-003A	09/28/2023	WG	A, B
MW-9D-20230928	N	2309528-003B	09/28/2023	WG	D, E
MW-9D-20230928	N	2309528-003C	09/28/2023	WG	F
MW-9D-20230928	N	2309528-003D	09/28/2023	WG	C
MW-12D-20230928	N	2309528-004A	09/28/2023	WG	A, B
MW-12D-20230928	N	2309528-004B	09/28/2023	WG	D, E
MW-12D-20230928	N	2309528-004C	09/28/2023	WG	F
MW-12D-20230928	N	2309528-004D	09/28/2023	WG	C
FD-01-20230928	N	2309528-005A	09/28/2023	WG	A, B
FD-01-20230928	N	2309528-005B	09/28/2023	WG	D, E
FD-01-20230928	N	2309528-005C	09/28/2023	WG	F
FD-01-20230928	N	2309528-005D	09/28/2023	WG	C
MW-14D-GW-20230926	N	309422-01	09/26/2023	WG	G, H, I, J, K, L
MW-18D-GW-20230926	N	309422-02	09/26/2023	WG	G, H, I, J, K, L
MW-17D-GW-20230927	N	309479-01	09/27/2023	WG	G, H, I, J, K, L
MW-8S-GW-20230927	N	309479-02	09/27/2023	WG	G, H, I, J, K, L
MW-13D-GW-20230927	N	309479-03	09/27/2023	WG	G, H, I, J, K, L
MW-15D-GW-20230927	N	309479-04	09/27/2023	WG	G, H, I, J, K, L
MW-16D-GW-20230927	N	309479-05	09/27/2023	WG	G, H, I, J, K, L

TABLE 1
SAMPLE MANAGEMENT
WHIDBEY ISLAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)
MW-4S-20230928	N	309532-01	09/28/2023	WG	G, H, I, J, K, L
MW-2S-20230928	N	309532-02	09/28/2023	WG	G, H, J, K, L
MW-6S-20230928	N	309532-03	09/28/2023	WG	G, H, I, J, K, L
MW-9D-20230928	N	309532-04	09/28/2023	WG	G, H, I, J, K, L
MW-12D-20230928	N	309532-05	09/28/2023	WG	G, H, I, J, K, L
FD-01-20230928	FD	309532-06	09/28/2023	WG	G, H, I, J, K, L

TABLE 2
METHOD DESCRIPTION
WHIDBEY ISLAND, WASHINGTON

Letter Code	Analytic Method	Method Description	Holding Time
A	E300	Inorganic Anions	28 days for liquid unpreserved
		Inorganic Anions (Nitrate, Nitrite)	48 hours
B	SM2320B	Alkalinity	14 days for liquid unpreserved
C	RSK175	Dissolved Gases	14 days for liquid, preserved 7 days for liquid unpreserved
D	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid unpreserved
E	SM5310C	Total Organic Carbon	28 days for liquid, preserved
F	SM4500-S2-D	TOTAL SULFIDES	7 days for liquid preserved
G	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved
H	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved
I	SM2540D	Total Suspended Solids	7 days for liquid unpreserved
J	SW6020B	Metals	180 days for liquid, preserved
K	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved 7 days for liquid unpreserved
L	SW8270E	Semivolatile Organic Compounds (SVOCs)	7 days extraction / 40 days analysis for liquid, unpreserved

TABLE 3
SUMMARY OF QUALIFIERS
WHIDBEY ISLAND, WASHINGTON

SDG	Method	Basis	Sample ID	Lab ID	Analyte	Fraction	Reportable Result	Reported Result	Validated Result	Reason for Qualifier
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	2-Methylnaphthalene	N	No	52	52 R	EXE
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	2-Methylnaphthalene	N	No	52	52 R	EXE
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Naphthalene	N	No	110	110 R	EXE
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Naphthalene	N	No	110	110 R	EXE
2309476	E300	NA	MW-14D-GW-20230926	2309476-001B	Nitrate (as N)	N	No	5.86	5.86 R	EXE
2309483	E300	NA	MW-15D-GW-20230927	2309483-004A	Nitrate (as N)	N	Yes	10.8	10.8 J	EXE
309479-	SW8270E	NA	MW-17D-GW-20230927	309479-01	Naphthalene	N	No	79	79 R	EXE
309479-	SW8270E	NA	MW-17D-GW-20230927	309479-01	Naphthalene	N	No	79	79 R	EXE
2309476	E300	NA	MW-18D-GW-20230926	2309476-002B	Nitrate (as N)	N	No	12.3	12.3 R	EXE
309479-	SW8270E	NA	MW-8S-GW-20230927	309479-02	1-Methylnaphthalene	N	No	47	47 R	EXE
309479-	SW8270E	NA	MW-8S-GW-20230927	309479-02	1-Methylnaphthalene	N	No	47	47 R	EXE
309479-	SW8270E	NA	MW-8S-GW-20230927	309479-02	2-Methylnaphthalene	N	No	49	49 R	EXE
309479-	SW8270E	NA	MW-8S-GW-20230927	309479-02	2-Methylnaphthalene	N	No	49	49 R	EXE
309532-	NWTPH-DX	NA	FD-01-20230928	309532-06	Total Petroleum Hydrocarbons (C10-C25) DRO	N	Yes	1900	1900 J	FDP
309532-	SM2540D	NA	FD-01-20230928	309532-06	Total Suspended Solids (TSS)	N	Yes	49	49 J	FDP
309532-	SW6020B	NA	FD-01-20230928	309532-06	Lead	D	Yes	2.72	2.72 J	FDP
309532-	NWTPH-DX	NA	MW-9D-20230928	309532-04	Total Petroleum Hydrocarbons (C10-C25) DRO	N	Yes	7500	7500 J	FDP
309532-	SM2540D	NA	MW-9D-20230928	309532-04	Total Suspended Solids (TSS)	N	Yes	18	18 J	FDP
309532-	SW6020B	NA	MW-9D-20230928	309532-04	Lead	D	Yes	U	UJ	FDP
2309476	E300	NA	MW-14D-GW-20230926	2309476-001B	Nitrate (as N)	N	Yes	5.92	5.92 J	HTQ
2309476	E300	NA	MW-18D-GW-20230926	2309476-002B	Nitrate (as N)	N	Yes	15.5	15.5 J	HTQ
2309528	SM4500-NH3G	NA	FD-01-20230928	2309528-005B	Ammonia	N	Yes	U	R	MSD
2309528	SM4500-NH3G	NA	MW-12D-20230928	2309528-004B	Ammonia	N	Yes	U	R	MSD
2309476	SM4500-NH3G	NA	MW-14D-GW-20230926	2309476-001C	Ammonia	N	Yes	U	R	MSD
2309476	SM4500-NH3G	NA	MW-18D-GW-20230926	2309476-002C	Ammonia	N	Yes	U	R	MSD
2309528	SM4500-NH3G	NA	MW-4S-20230928	2309528-001B	Ammonia	N	Yes	U	R	MSD
2309528	SM4500-NH3G	NA	MW-6S-20230928	2309528-002B	Ammonia	N	Yes	U	R	MSD
2309528	SM4500-NH3G	NA	MW-9D-20230928	2309528-003B	Ammonia	N	Yes	U	R	MSD
309532-	SW8270E	NA	FD-01-20230928	309532-06	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	FD-01-20230928	309532-06	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	FD-01-20230928	309532-06	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	FD-01-20230928	309532-06	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	FD-01-20230928	309532-06	Pyrene	N	No	U	R	VCM
309532-	SW8270E	NA	FD-01-20230928	309532-06	Pyrene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Acenaphthene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Acenaphthene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Acenaphthylene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Acenaphthylene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Fluorene	N	No	U	R	VCM
309479-	SW8270E	NA	MW-13D-GW-20230927	309479-03	Fluorene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-2S-20230928	309532-02	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-2S-20230928	309532-02	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-2S-20230928	309532-02	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-2S-20230928	309532-02	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Benzo(a)anthracene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Chrysene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Pyrene	N	No	U	R	VCM
309532-	SW8270E	NA	MW-9D-20230928	309532-04	Pyrene	N	No	U	R	VCM

Notes:
MSD = Matrix spike/matrix spike duplicate percent recoveries or relative percent difference were outside the specified limits.
VCM = Validator's choice of method.
HTQ = Holding time exceedance.
EXE = Result exceeds the calibration range.
FDP = Field duplicate qualifier due to an exceedance of the specified limits.
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
R = The sample results were rejected as unusable; the compound may or may not be present in the sample.
UJ = The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 309532
Work Order Number: 2309528

October 09, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 9/29/2023 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *10/11/2023*

CLIENT: Friedman & Bruya
Project: 309532
Work Order: 2309528

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2309528-001	MW-4S	09/28/2023 12:40 PM	09/29/2023 9:40 AM
2309528-002	MW-6S	09/28/2023 4:50 PM	09/29/2023 9:40 AM
2309528-003	MW-9D	09/28/2023 12:05 PM	09/29/2023 9:40 AM
2309528-004	MW-12D	09/28/2023 10:05 AM	09/29/2023 9:40 AM
2309528-005	FD-01	09/28/2023 12:30 PM	09/29/2023 9:40 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2309528**
Date: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

10/11/23 Rev 1: Includes corrections to sample ID's per client request

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-001 **Collection Date:** 9/28/2023 12:40:00 PM
Client Sample ID: **MW-4S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 2:56:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 2:56:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 2:56:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	24.7	1.20	D	mg/L	10	10/3/2023
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 8:51:00 PM
Nitrate (as N)	0.202	0.200	D	mg/L	2	9/29/2023 8:51:00 PM
Sulfate	13.8	1.20	DQ*	mg/L	2	9/29/2023 8:51:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	3.90	0.700		mg/L	1	10/3/2023 9:11:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	122	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:11:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-002 **Collection Date:** 9/28/2023 4:50:00 PM
Client Sample ID: **MW-6S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 2:59:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 2:59:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 2:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	24.7	1.20	D	mg/L	10	10/3/2023 12:23:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 9:15:00 PM
Nitrate (as N)	0.432	0.200	D	mg/L	2	9/29/2023 9:15:00 PM
Sulfate	8.40	1.20	DQ*	mg/L	2	9/29/2023 9:15:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	2.83	0.700		mg/L	1	10/3/2023 10:35:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	150	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:16:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-003 **Collection Date:** 9/28/2023 12:05:00 PM
Client Sample ID: **MW-9D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:01:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:01:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:01:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	28.4	1.20	D	mg/L	10	10/3/2023 12:46:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 9:38:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 9:38:00 PM
Sulfate	5.13	1.20	DQ*	mg/L	2	9/29/2023 9:38:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	17.8	0.700		mg/L	1	10/3/2023 11:06:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	182	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:21:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	0.0645	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-004 **Collection Date:** 9/28/2023 10:05:00 AM
Client Sample ID: **MW-12D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:04:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:04:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:04:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	11.3	1.20	D	mg/L	10	10/3/2023 1:09:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 10:01:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 10:01:00 PM
Sulfate	2.77	1.20	DQ*	mg/L	2	9/29/2023 10:01:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	15.4	0.700		mg/L	1	10/3/2023 11:27:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	257	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:36:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-005 **Collection Date:** 9/28/2023 12:30:00 PM
Client Sample ID: **FD-01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:07:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:07:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:07:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	28.4	1.20	D	mg/L	10	10/3/2023 1:32:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 10:24:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 10:24:00 PM
Sulfate	5.18	1.20	DQ*	mg/L	2	9/29/2023 10:24:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	18.0	0.700		mg/L	1	10/4/2023 12:01:00 AM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	177	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:41:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	0.0612	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R86938**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **MBLKW**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814643**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R86938**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **LCSW**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814644**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	105	2.50	100.0	0	105	83.8	121				

Sample ID: **2309528-002ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **MW-6S**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814817**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	152	2.50						150.5	1.23	20	

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-41680**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MBLKW**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814347**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-41680**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **LCSW**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814348**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.507	0.100	0.5000	0	101	78.3	120				

Sample ID: **2309476-002CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814327**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2309476-002CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814328**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2309476-002CMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814329**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2309528-003BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MW-9D**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814340**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2309528-003BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MW-9D**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814341**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-41641** SampType: **MBLK** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **MBLKW** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815821**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-41641** SampType: **LCS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **LCSW** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815822**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.767	0.120	0.7500	0	102	90	110				
Nitrite (as N)	0.755	0.120	0.7500	0	101	90	110				
Nitrate (as N)	0.719	0.100	0.7500	0	95.9	90	110				
Sulfate	4.27	0.600	3.750	0	114	90	110				S

NOTES:
S - Outlying spike recovery observed (high bias). Detections will be qualified with a *.

Sample ID: **2309516-001EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	15.0	0.240						15.33	1.99	20	DE
Nitrite (as N)	ND	0.240						0		20	D
Nitrate (as N)	ND	0.200						0		20	D
Sulfate	ND	1.20						0		20	D

Sample ID: **2309516-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.2	0.240	1.500	15.33	57.5	80	120				DES
Nitrite (as N)	1.45	0.240	1.500	0	96.5	80	120				D

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2309516-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.38	0.200	1.500	0	92.1	80	120				D
Sulfate	7.82	1.20	7.500	0	104	80	120				D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309516-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815826**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.2	0.240	1.500	15.33	54.8	80	120	16.19	0.247	20	DES
Nitrite (as N)	1.45	0.240	1.500	0	96.8	80	120	1.448	0.276	20	D
Nitrate (as N)	1.39	0.200	1.500	0	92.4	80	120	1.382	0.289	20	D
Sulfate	7.82	1.20	7.500	0	104	80	120	7.820	0.0511	20	D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309537-005EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815845**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.64	0.120						3.641	0.110	20	E
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.716	0.100						0.7160	0	20	
Sulfate	10.4	0.600						10.40	0.212	20	

Sample ID: **2309537-005EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.36	0.120	0.7500	3.641	95.7	80	120				E
Nitrite (as N)	0.738	0.120	0.7500	0	98.4	80	120				
Nitrate (as N)	1.49	0.100	0.7500	0.7160	104	80	120				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2309537-005EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	14.2	0.600	3.750	10.40	102	80	120				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R86923**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **MBLKW**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814215**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R86923**	SampType: **LCS**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **LCSW**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814216**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.192	0.0500	0.2000	0	96.1	80	120				

Sample ID: **2309476-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814218**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2309476-001DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814219**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.186	0.0500	0.2000	0	92.8	80	120				

Sample ID: **2309476-001DMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814220**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.187	0.0500	0.2000	0	93.3	80	120	0.1855	0.591	20	

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R86910**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **MBLKW**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813951**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R86910**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **LCSW**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813952**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.02	0.700	5.000	0	100	90	116				

Sample ID: **2309402-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813954**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	235	0.700						219.8	6.75	20	

Sample ID: **2309402-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813955**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	228	0.700	5.000	219.8	170	62.4	130				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309402-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813956**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	235	0.700	5.000	219.8	310	62.4	130	228.3	3.01	30	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2309483-002BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1814242**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.89	0.700						4.860	0.534	20	

Sample ID: **2309483-002BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1814243**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.67	0.700	5.000	4.860	96.1	62.4	130				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R86908**	SampType: **LCS**	Units: **ppmv**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **LCSW**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813905**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	983	0.00675	1,000	0	98.3	73.6	124				
Ethene	1,000	0.0146	1,000	0	100	76.3	122				
Ethane	969	0.0151	1,000	0	96.9	76.1	123				

Sample ID: **MB-R86908**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **MBLKW**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813893**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2309476-001AREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **BATCH**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813879**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675						0		30	
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Sample ID: **2309528-005DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **FD-01**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813962**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675						0		30	
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2309528
Logged by:	Clare Griggs	Date Received:	9/29/2023 9:40:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	0.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO.	PO # D-463
REMARKS EIM and EQuIS 4	

TURNAROUND TIME
☒ Standard TAT
RUSH 2309528
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Chloride	Sulfate	Ammonia	Alkalinity	Sulfide	RSK diss gases	TOC		Notes
MW-4S		9/28/23	1240	W		x	x	x	x	x	x	x	x	x		
MW-6S		↑	1650	↑		↑	↑	↑	↑	↑	↑	↑	↑	↑		
MW-9D			1205													
MW-12D		↓	1005	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓		
FD-01		9/28/23	1230	W		x	x	x	x	x	x	x	x	x		

09/29

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		~~Michael Erdahl~~ Eric Hoover	Friedman & Bruya	9/29/23	9:35
Received by:		Nathan Kotter	FAI	9/29/23	940
Relinquished by:					
Received by:					

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.
309532
edit per EY 9/29/23 -cg

PO #
D-463

REMARKS
EIM and EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH 2309528
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Chloride	Sulfate	Ammonia	Alkalinity	Sulfide	RSK diss gases	TOC		Notes
MW-4S		9/28/23	1240	W		x	x	x	x	x	x	x	x	x		
MW-6S		↑	1650	↑		↑	↑	↑	↑	↑	↑	↑	↑	↑		
MW-9D			1205			↓	↓	↓	↓	↓	↓	↓	↓	↓		
MW-12D		↓	1005	↓												
FD-01		9/28/23	1230	W		x	x	x	x	x	x	x	x	x		

09/29

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	~~Michael Erdahl~~ Eric Ulvund	Friedman & Bruya	9/29/23	9:35
Received by:	Nathan Kottler	FAI	9/29/23	940
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 11, 2023

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on September 29, 2023 from the Whidbey 0204475-001, F&BI 309532 project. There are 49 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1011R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 29, 2023 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey 0204475-001, F&BI 309532 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
309532 -01	MW-4S
309532 -02	MW-2S
309532 -03	MW-6S
309532 -04	MW-9D
309532 -05	MW-12D
309532 -06	FD-01

The samples were sent to Fremont Analytical for anions, RSK 175 dissolved gases, sulfide, alkalinity, ammonia, and TOC analyses. The report is enclosed.

The 8260D calibration standard failed the acceptance criteria for acetone. The data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for samples MW-2S, MW-9D, and FD-01. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/03/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-4S 309532-01 1/10	12,000	128
MW-2S 309532-02	<100	125
MW-6S 309532-03	210	129
MW-9D 309532-04 1/20	73,000	130
MW-12D 309532-05 1/20	50,000	133
FD-01 309532-06 1/20	73,000	131
Method Blank 03-2220 MB	<100	130

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/02/23
Date Analyzed: 10/02/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-4S 309532-01 1/1.2	1,300 x	<300	102
MW-2S 309532-02	460 x	910 x	84
MW-6S 309532-03 1/1.3	80 x	<320	103
MW-9D 309532-04	7,500 x	<250	95
MW-12D 309532-05	5,100 x	<250	103
FD-01 309532-06	1,900 x	<250	83
Method Blank 03-2353 MB	<50	<250	108

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	309532-01.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.26
Lead	<1
Manganese	464

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2S f	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	309532-02.173
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.50
Lead	<1
Manganese	9.27

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	309532-03.177
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12.2
Lead	<1
Manganese	138

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	309532-04.178
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22.3
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 x100
Date Analyzed:	10/04/23	Data File:	309532-04 x100.041
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,660

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/02/23	Data File:	309532-05.185
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	18.9
Lead	2.35

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 x100
Date Analyzed:	10/04/23	Data File:	309532-05 x100.042
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	4,300

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/02/23	Data File:	309532-06.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	28.5
Lead	2.72

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 x100
Date Analyzed:	10/03/23	Data File:	309532-06 x100.068
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,870

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-770 mb
Date Analyzed:	10/02/23	Data File:	I3-770 mb.158
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-771 mb
Date Analyzed:	10/02/23	Data File:	I3-771 mb.160
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	309532-01.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.82
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	309532-02.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.95
Lead	1.70

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	309532-03.127
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.49
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	309532-04.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	49.6
Lead	12.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/02/23	Data File:	309532-05.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	21.1
Lead	2.72

Analysis For Total Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/02/23	Data File:	309532-06.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	49.2
Lead	12.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-765 mb
Date Analyzed:	10/02/23	Data File:	I3-765 mb.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01 1/20
Date Analyzed:	10/02/23	Data File:	100226.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<20	1,3-Dichloropropane	<20
Chloromethane	<200	Tetrachloroethene	<20
Vinyl chloride	<0.4	Dibromochloromethane	<10
Bromomethane	<100	1,2-Dibromoethane (EDB)	<0.2
Chloroethane	<20	Chlorobenzene	<20
Trichlorofluoromethane	<20	Ethylbenzene	<20
Acetone	<1,000 ca	1,1,1,2-Tetrachloroethane	<20
1,1-Dichloroethene	<20	m,p-Xylene	<40
Hexane	<100	o-Xylene	<20
Methylene chloride	<100	Styrene	<20
Methyl t-butyl ether (MTBE)	<20	Isopropylbenzene	79
trans-1,2-Dichloroethene	<20	Bromoform	<100
1,1-Dichloroethane	<20	n-Propylbenzene	160
2,2-Dichloropropane	<20	Bromobenzene	<20
cis-1,2-Dichloroethene	<20	1,3,5-Trimethylbenzene	350
Chloroform	<20	1,1,2,2-Tetrachloroethane	<4
2-Butanone (MEK)	<400	1,2,3-Trichloropropane	<20
1,2-Dichloroethane (EDC)	<4	2-Chlorotoluene	<20
1,1,1-Trichloroethane	<20	4-Chlorotoluene	<20
1,1-Dichloropropene	<20	tert-Butylbenzene	<20
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	1,400
Benzene	<7	sec-Butylbenzene	<20
Trichloroethene	<10	p-Isopropyltoluene	<20
1,2-Dichloropropane	<20	1,3-Dichlorobenzene	<20
Bromodichloromethane	<10	1,4-Dichlorobenzene	<20
Dibromomethane	<20	1,2-Dichlorobenzene	<20
4-Methyl-2-pentanone	<200	1,2-Dibromo-3-chloropropane	<200
cis-1,3-Dichloropropene	<8	1,2,4-Trichlorobenzene	<20
Toluene	<20	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<8	Naphthalene	<20
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<20
2-Hexanone	<200		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	100224.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	100225.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	7.4
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	7.3
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	1.1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	2.4
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	12
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	5.7
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 1/100
Date Analyzed:	10/02/23	Data File:	100227.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	2,700
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	11,000
Hexane	<500	o-Xylene	5,000
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	290
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	720
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,500
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,500	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	810
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 1/100
Date Analyzed:	10/02/23	Data File:	100228.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	1,900
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	7,200
Hexane	<500	o-Xylene	2,800
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	180
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	570
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,000
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	3,100	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	700
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 1/100
Date Analyzed:	10/02/23	Data File:	100229.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	2,600
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	11,000
Hexane	<500	o-Xylene	4,800
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	280
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	720
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,500
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,500	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	820
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	03-2304 mb
Date Analyzed:	10/02/23	Data File:	100208.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	100224.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	84	11	173
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	116	10	140
Terphenyl-d14	93	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.46
2-Methylnaphthalene	0.43
1-Methylnaphthalene	5.3
Acenaphthylene	<0.02
Acenaphthene	0.063
Fluorene	0.045
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02 1/2
Date Analyzed:	10/03/23	Data File:	100229.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	11	173
2-Fluorobiphenyl	60	25	128
2,4,6-Tribromophenol	92	10	140
Terphenyl-d14	75 J	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.45
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	0.077
Anthracene	<0.04
Fluoranthene	0.093
Benz(a)anthracene	<0.04 J
Chrysene	<0.04 J
Benzo(a)pyrene	0.053
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02 1/4
Date Analyzed:	10/03/23	Data File:	100308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67 d	11	173
2-Fluorobiphenyl	62 d	25	128
2,4,6-Tribromophenol	98 d	10	140
Terphenyl-d14	81 d	50	150

Compounds:	Concentration ug/L (ppb)
Pyrene	0.087
Benz(a)anthracene	<0.08
Chrysene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/03/23	Data File:	100307.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	11	173
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	96	10	140
Terphenyl-d14	102	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.52
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.030
Anthracene	<0.02
Fluoranthene	0.023
Pyrene	0.056
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	100225.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	61	11	173
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	112	10	140
Terphenyl-d14	84 J	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.24
Fluorene	0.74
Phenanthrene	1.1
Anthracene	0.50
Fluoranthene	0.15
Pyrene	0.24 J
Benz(a)anthracene	0.19 J
Chrysene	0.066 J
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.077
Benzo(k)fluoranthene	0.034
Indeno(1,2,3-cd)pyrene	0.037
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.064

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 1/200
Date Analyzed:	10/03/23	Data File:	100312.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	100 d	11	173
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	0 d	10	140
Terphenyl-d14	80 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	550
2-Methylnaphthalene	220
1-Methylnaphthalene	100
Pyrene	<4
Benz(a)anthracene	<4
Chrysene	<4

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/03/23	Data File:	100226.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	72	11	173
2-Fluorobiphenyl	84	25	128
2,4,6-Tribromophenol	120	10	140
Terphenyl-d14	86	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.083
Fluorene	0.10
Phenanthrene	0.16
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 1/100
Date Analyzed:	10/03/23	Data File:	100314.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80 d	11	173
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	173 d	10	140
Terphenyl-d14	70 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	360
2-Methylnaphthalene	94
1-Methylnaphthalene	40

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/03/23	Data File:	100227.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	11	173
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	111	10	140
Terphenyl-d14	80 J	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.20
Fluorene	0.63
Phenanthrene	0.97
Anthracene	0.42
Fluoranthene	0.14
Pyrene	0.20 J
Benz(a)anthracene	0.16 J
Chrysene	0.056 J
Benzo(a)pyrene	0.14
Benzo(b)fluoranthene	0.071
Benzo(k)fluoranthene	0.030
Indeno(1,2,3-cd)pyrene	0.027
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.052

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 1/200
Date Analyzed:	10/03/23	Data File:	100313.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60 d	11	173
2-Fluorobiphenyl	60 d	25	128
2,4,6-Tribromophenol	0 d	10	140
Terphenyl-d14	80 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	520
2-Methylnaphthalene	200
1-Methylnaphthalene	95
Pyrene	<4
Benz(a)anthracene	<4
Chrysene	<4

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	03-2352 mb
Date Analyzed:	10/02/23	Data File:	100206.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	94	11	173
2-Fluorobiphenyl	93	25	128
2,4,6-Tribromophenol	78	10	140
Terphenyl-d14	103	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/02/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-4S 309532-01	<5
MW-6S 309532-03	<5
MW-9D 309532-04	18
MW-12D 309532-05	42
FD-01 309532-06	49
Method Blank I3-768	<5

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 309532-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	210	200	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	128	128	72-139	0

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 309501-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	1.89	98	97	75-125	1
Lead	ug/L (ppb)	10	<1	78	77	75-125	1
Manganese	ug/L (ppb)	20	4,560	0 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-120
Lead	ug/L (ppb)	10	99	80-120
Manganese	ug/L (ppb)	20	95	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 309532-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	18.9	102 b	97 b	75-125	5 b
Lead	ug/L (ppb)	10	2.35	85 b	84 b	75-125	1 b
Manganese	ug/L (ppb)	20	3,770	147 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Lead	ug/L (ppb)	10	96	80-120
Manganese	ug/L (ppb)	20	93	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 309532-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	3.82	104 b	101 b	75-125	3 b
Lead	ug/L (ppb)	10	<1	89	90	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120
Lead	ug/L (ppb)	10	92	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	ug/L (ppb)	10	99	102	59-132	3
Vinyl chloride	ug/L (ppb)	10	102	102	64-142	0
Bromomethane	ug/L (ppb)	10	107	107	50-197	0
Chloroethane	ug/L (ppb)	10	105	109	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	100	102	51-159	2
Acetone	ug/L (ppb)	50	50	52	10-140	4
1,1-Dichloroethene	ug/L (ppb)	10	96	99	64-140	3
Hexane	ug/L (ppb)	10	92	85	54-136	8
Methylene chloride	ug/L (ppb)	10	92	96	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	97	100	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	107	109	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	96	98	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	105	105	64-148	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	111	70-130	5
Chloroform	ug/L (ppb)	10	94	96	70-130	2
2-Butanone (MEK)	ug/L (ppb)	50	70	72	47-112	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	98	96	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	97	99	70-130	2
1,1-Dichloropropene	ug/L (ppb)	10	95	95	70-130	0
Carbon tetrachloride	ug/L (ppb)	10	98	100	70-130	2
Benzene	ug/L (ppb)	10	105	105	70-130	0
Trichloroethene	ug/L (ppb)	10	100	98	70-130	2
1,2-Dichloropropane	ug/L (ppb)	10	98	99	70-130	1
Bromodichloromethane	ug/L (ppb)	10	99	96	70-130	3
Dibromomethane	ug/L (ppb)	10	98	98	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	101	103	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	101	100	69-131	1
Toluene	ug/L (ppb)	10	106	105	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	100	97	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	100	99	70-130	1
2-Hexanone	ug/L (ppb)	50	86	87	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	106	100	70-130	6
Tetrachloroethene	ug/L (ppb)	10	107	105	70-130	2
Dibromochloromethane	ug/L (ppb)	10	106	106	60-148	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	105	102	70-130	3
Chlorobenzene	ug/L (ppb)	10	101	100	70-130	1
Ethylbenzene	ug/L (ppb)	10	107	106	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	103	102	70-130	1
m,p-Xylene	ug/L (ppb)	20	103	103	70-130	0
o-Xylene	ug/L (ppb)	10	103	103	70-130	0
Styrene	ug/L (ppb)	10	101	100	70-130	1
Isopropylbenzene	ug/L (ppb)	10	102	104	70-130	2
Bromoform	ug/L (ppb)	10	105	100	69-138	5
n-Propylbenzene	ug/L (ppb)	10	99	101	70-130	2
Bromobenzene	ug/L (ppb)	10	99	104	70-130	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	103	70-130	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	103	107	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	98	99	70-130	1
2-Chlorotoluene	ug/L (ppb)	10	99	99	70-130	0
4-Chlorotoluene	ug/L (ppb)	10	100	98	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	99	99	70-130	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
sec-Butylbenzene	ug/L (ppb)	10	101	102	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	103	104	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,4-Dichlorobenzene	ug/L (ppb)	10	100	101	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	104	104	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	100	101	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	101	99	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	100	96	70-130	4
Naphthalene	ug/L (ppb)	10	102	102	70-130	0
1,2,3-Trichlorobenzene	ug/L (ppb)	10	103	99	70-130	4

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	75	68	62-97	10
2-Methylnaphthalene	ug/L (ppb)	5	81	71	64-101	13
1-Methylnaphthalene	ug/L (ppb)	5	81	71	64-103	13
Acenaphthylene	ug/L (ppb)	5	80	77	70-130	4
Acenaphthene	ug/L (ppb)	5	80	75	70-130	6
Fluorene	ug/L (ppb)	5	84	81	70-130	4
Phenanthrene	ug/L (ppb)	5	91	88	70-130	3
Anthracene	ug/L (ppb)	5	87	83	70-130	5
Fluoranthene	ug/L (ppb)	5	96	92	70-130	4
Pyrene	ug/L (ppb)	5	95	95	70-130	0
Benz(a)anthracene	ug/L (ppb)	5	93	91	70-130	2
Chrysene	ug/L (ppb)	5	93	91	70-130	2
Benzo(a)pyrene	ug/L (ppb)	5	93	91	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	5	91	91	70-130	0
Benzo(k)fluoranthene	ug/L (ppb)	5	91	90	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	105	93	70-130	12
Dibenz(a,h)anthracene	ug/L (ppb)	5	100	92	70-130	8
Benzo(g,h,i)perylene	ug/L (ppb)	5	102	95	70-130	7

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 309493-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	3.5	3.5	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	82	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

309532

SAMPLE CHAIN OF CUSTODY

09-29-23 vw6/14/14

Page # 1 of 1

Report To Heather Good Victoria Pehlivan

Company Hart & Aldrich

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey	210475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	MTBE BTEX EPA 8021	EDB/EDC NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MEE	TSS	Tot/Dis. As Pb Mn Sb	MNA Parameters	* insufficient volume for tests Notes ME 10/10/23
MW-4S	01 A-Q	9/28/23	1240	H2O	17	X	X	X	X	X	X		X	X	X	X	Low recovery
MW-2S	02 A-F		1400		6	X	X	X	X	X	X		X	X	X	X	Low recovery
MW-6S	03 A-Q		1650		17	X	X	X	X	X	X		X	X	X	X	
MW-9D	04		1205		17	X	X	X	X	X	X		X	X	X	X	
MW-12D	05		1005		17	X	X	X	X	X	X		X	X	X	X	MNA Parameters
FD-01	06	↓	1230	↓	17	X	X	X	X	X	X		X	X	X	X	nitrate, nitrite
																	ammonia, TOC,
																	chloride, sulfate
																	Samples received at 4 °C alkalinity, sulfide
																	dissolved manganese

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Dakkura	HA	9/29/23	905
Received by:	Eric Power	FEB	9/29/23	905
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

AW

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 309532
Work Order Number: 2309528

October 09, 2023

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 9/29/2023 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *10/09/2023*

CLIENT: Friedman & Bruya
Project: 309532
Work Order: 2309528

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2309528-001	MW-45	09/28/2023 12:40 PM	09/29/2023 9:40 AM
2309528-002	MW-65	09/28/2023 4:50 PM	09/29/2023 9:40 AM
2309528-003	MW-9D	09/28/2023 12:05 PM	09/29/2023 9:40 AM
2309528-004	MW-12D	09/28/2023 10:05 AM	09/29/2023 9:40 AM
2309528-005	FD-01	09/28/2023 12:30 PM	09/29/2023 9:40 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2309528**
Date: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-001 **Collection Date:** 9/28/2023 12:40:00 PM
Client Sample ID: **MW-45** **Matrix:** Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 2:56:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 2:56:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 2:56:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	24.7	1.20	D	mg/L	10	10/3/2023
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 8:51:00 PM
Nitrate (as N)	0.202	0.200	D	mg/L	2	9/29/2023 8:51:00 PM
Sulfate	13.8	1.20	DQ*	mg/L	2	9/29/2023 8:51:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	3.90	0.700		mg/L	1	10/3/2023 9:11:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	122	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:11:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-002 **Collection Date:** 9/28/2023 4:50:00 PM
Client Sample ID: **MW-65** **Matrix:** Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 2:59:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 2:59:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 2:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	24.7	1.20	D	mg/L	10	10/3/2023 12:23:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 9:15:00 PM
Nitrate (as N)	0.432	0.200	D	mg/L	2	9/29/2023 9:15:00 PM
Sulfate	8.40	1.20	DQ*	mg/L	2	9/29/2023 9:15:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	2.83	0.700		mg/L	1	10/3/2023 10:35:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	150	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:16:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-003 **Collection Date:** 9/28/2023 12:05:00 PM
Client Sample ID: **MW-9D** **Matrix:** Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:01:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:01:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:01:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	28.4	1.20	D	mg/L	10	10/3/2023 12:46:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 9:38:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 9:38:00 PM
Sulfate	5.13	1.20	DQ*	mg/L	2	9/29/2023 9:38:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	17.8	0.700		mg/L	1	10/3/2023 11:06:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	182	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:21:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	0.0645	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-004 **Collection Date:** 9/28/2023 10:05:00 AM
Client Sample ID: **MW-12D** **Matrix:** Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:04:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:04:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:04:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	11.3	1.20	D	mg/L	10	10/3/2023 1:09:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 10:01:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 10:01:00 PM
Sulfate	2.77	1.20	DQ*	mg/L	2	9/29/2023 10:01:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	15.4	0.700		mg/L	1	10/3/2023 11:27:00 PM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	257	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:36:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Analytical Report

Work Order: **2309528**
Date Reported: **10/9/2023**

CLIENT: Friedman & Bruya
Project: 309532

Lab ID: 2309528-005 **Collection Date:** 9/28/2023 12:30:00 PM
Client Sample ID: **FD-01** **Matrix:** Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R86908		Analyst: NR
Methane	ND	0.00675		mg/L	1	10/3/2023 3:07:00 PM
Ethene	ND	0.0146		mg/L	1	10/3/2023 3:07:00 PM
Ethane	ND	0.0151		mg/L	1	10/3/2023 3:07:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 41641		Analyst: SS
Chloride	28.4	1.20	D	mg/L	10	10/3/2023 1:32:00 AM
Nitrite (as N)	ND	0.240	D	mg/L	2	9/29/2023 10:24:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	9/29/2023 10:24:00 PM
Sulfate	5.18	1.20	DQ*	mg/L	2	9/29/2023 10:24:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R86910		Analyst: SS
Total Organic Carbon	18.0	0.700		mg/L	1	10/4/2023 12:01:00 AM
Total Alkalinity by SM 2320B				Batch ID: R86938		Analyst: ME
Alkalinity, Total (As CaCO3)	177	2.50		mg/L	1	10/4/2023 4:28:34 PM
Ammonia by SM 4500 NH3G				Batch ID: 41680		Analyst: SLL
Nitrogen, Ammonia	ND	0.100		mg/L	1	10/4/2023 11:41:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R86923		Analyst: SLL
Sulfide	0.0612	0.0500		mg/L	1	10/2/2023 10:00:00 AM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.
* - Associated LCS is above acceptance criteria. Result may be high-biased.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R86938**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **MBLKW**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814643**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R86938**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **LCSW**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814644**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	105	2.50	100.0	0	105	83.8	121				

Sample ID: **2309528-002ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86938**
Client ID: **MW-65**	Batch ID: **R86938**		Analysis Date: **10/4/2023**	SeqNo: **1814817**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	152	2.50						150.5	1.23	20	

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-41680**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MBLKW**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814347**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-41680**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **LCSW**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814348**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.507	0.100	0.5000	0	101	78.3	120				

Sample ID: **2309476-002CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814327**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2309476-002CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814328**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2309476-002CMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **BATCH**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814329**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2309528-003BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MW-9D**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814340**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2309528-003BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/4/2023**	RunNo: **86927**
Client ID: **MW-9D**	Batch ID: **41680**		Analysis Date: **10/4/2023**	SeqNo: **1814341**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100	0.5000	0	0	17	145				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-41641** SampType: **MBLK** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **MBLKW** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815821**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-41641** SampType: **LCS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **LCSW** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815822**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.767	0.120	0.7500	0	102	90	110				
Nitrite (as N)	0.755	0.120	0.7500	0	101	90	110				
Nitrate (as N)	0.719	0.100	0.7500	0	95.9	90	110				
Sulfate	4.27	0.600	3.750	0	114	90	110				S

NOTES:
S - Outlying spike recovery observed (high bias). Detections will be qualified with a *.

Sample ID: **2309516-001EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	15.0	0.240						15.33	1.99	20	DE
Nitrite (as N)	ND	0.240						0		20	D
Nitrate (as N)	ND	0.200						0		20	D
Sulfate	ND	1.20						0		20	D

Sample ID: **2309516-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.2	0.240	1.500	15.33	57.5	80	120				DES
Nitrite (as N)	1.45	0.240	1.500	0	96.5	80	120				D

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2309516-001EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.38	0.200	1.500	0	92.1	80	120				D
Sulfate	7.82	1.20	7.500	0	104	80	120				D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309516-001EMSD** SampType: **MSD** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/29/2023** SeqNo: **1815826**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.2	0.240	1.500	15.33	54.8	80	120	16.19	0.247	20	DES
Nitrite (as N)	1.45	0.240	1.500	0	96.8	80	120	1.448	0.276	20	D
Nitrate (as N)	1.39	0.200	1.500	0	92.4	80	120	1.382	0.289	20	D
Sulfate	7.82	1.20	7.500	0	104	80	120	7.820	0.0511	20	D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309537-005EDUP** SampType: **DUP** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815845**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.64	0.120						3.641	0.110	20	E
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.716	0.100						0.7160	0	20	
Sulfate	10.4	0.600						10.40	0.212	20	

Sample ID: **2309537-005EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.36	0.120	0.7500	3.641	95.7	80	120				E
Nitrite (as N)	0.738	0.120	0.7500	0	98.4	80	120				
Nitrate (as N)	1.49	0.100	0.7500	0.7160	104	80	120				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2309537-005EMS** SampType: **MS** Units: **mg/L** Prep Date: **9/29/2023** RunNo: **86981**
Client ID: **BATCH** Batch ID: **41641** Analysis Date: **9/30/2023** SeqNo: **1815846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	14.2	0.600	3.750	10.40	102	80	120				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R86923**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **MBLKW**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814215**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R86923**	SampType: **LCS**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **LCSW**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814216**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.192	0.0500	0.2000	0	96.1	80	120				

Sample ID: **2309476-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814218**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2309476-001DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814219**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.186	0.0500	0.2000	0	92.8	80	120				

Sample ID: **2309476-001DMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **10/2/2023**		RunNo: **86923**		
Client ID: **BATCH**	Batch ID: **R86923**					Analysis Date: **10/2/2023**		SeqNo: **1814220**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.187	0.0500	0.2000	0	93.3	80	120	0.1855	0.591	20	

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R86910**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **MBLKW**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813951**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R86910**	SampType: **LCS**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **LCSW**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813952**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.02	0.700	5.000	0	100	90	116				

Sample ID: **2309402-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813954**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	235	0.700						219.8	6.75	20	

Sample ID: **2309402-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813955**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	228	0.700	5.000	219.8	170	62.4	130				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2309402-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86910**
Client ID: **BATCH**	Batch ID: **R86910**		Analysis Date: **10/3/2023**	SeqNo: **1813956**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	235	0.700	5.000	219.8	310	62.4	130	228.3	3.01	30	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2309483-002BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **10/3/2023** RunNo: **86910**
Client ID: **BATCH** Batch ID: **R86910** Analysis Date: **10/3/2023** SeqNo: **1814242**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.89	0.700						4.860	0.534	20	

Sample ID: **2309483-002BMS** SampType: **MS** Units: **mg/L** Prep Date: **10/3/2023** RunNo: **86910**
Client ID: **BATCH** Batch ID: **R86910** Analysis Date: **10/3/2023** SeqNo: **1814243**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.66	0.700	5.000	4.860	96.1	62.4	130				

Work Order: 2309528
CLIENT: Friedman & Bruya
Project: 309532

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R86908**	SampType: **LCS**	Units: **ppmv**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **LCSW**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813905**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	983	0.00675	1,000	0	98.3	73.6	124				
Ethene	1,000	0.0146	1,000	0	100	76.3	122				
Ethane	969	0.0151	1,000	0	96.9	76.1	123				

Sample ID: **MB-R86908**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **MBLKW**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813893**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2309476-001AREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **BATCH**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813879**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675						0		30	
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Sample ID: **2309528-005DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **10/3/2023**	RunNo: **86908**
Client ID: **FD-01**	Batch ID: **R86908**		Analysis Date: **10/3/2023**	SeqNo: **1813962**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675						0		30	
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2309528
Logged by:	Clare Griggs	Date Received:	9/29/2023 9:40:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	0.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO.	PO # D-463
REMARKS EIM and EQuIS 4	

TURNAROUND TIME
☒ Standard TAT
RUSH 2309528
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Chloride	Sulfate	Ammonia	Alkalinity	Sulfide	RSK diss gases	TOC		Notes
MW-4S		9/28/23	1240	W		x	x	x	x	x	x	x	x	x		
MW-6S		↑	1650	↑		↑	↑	↑	↑	↑	↑	↑	↑	↑		
MW-9D			1205													
MW-12D		↓	1005	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓		
FD-01		9/28/23	1230	W		x	x	x	x	x	x	x	x	x		

09/29

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		~~Michael Erdahl~~ Eric Hoover	Friedman & Bruya	9/29/23	9:35
Received by:		Nathan Kotter	FAI	9/29/23	940
Relinquished by:					
Received by:					

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.
309532
edit per EY 9/29/23 -cg

PO #
D-463

REMARKS
EIM and EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH 2309528
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Chloride	Sulfate	Ammonia	Alkalinity	Sulfide	RSK diss gases	TOC		Notes
MW-4S		9/28/23	1240	W		x	x	x	x	x	x	x	x	x		
MW-6S		↑	1650	↑		↑	↑	↑	↑	↑	↑	↑	↑	↑		
MW-9D			1205			↓	↓	↓	↓	↓	↓	↓	↓	↓		
MW-12D		↓	1005	↓												
FD-01		9/28/23	1230	W		x	x	x	x	x	x	x	x	x		

09/29

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	~~Michael Erdahl~~ Eric Ulvund	Friedman & Bruya	9/29/23	9:35
Received by:	Nathan Kottler	FAI	9/29/23	940
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 21, 2023

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on September 29, 2023 from the Whidbey 0204475-001, F&BI 309532 project. Per your request, the 8260D trichloroethene reporting limit has been lowered to <4 ug/L for the samples above that value.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1011R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Yelena Aravkina, M.S.
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5500 4th Avenue South
Seattle, WA 98108
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fbi@isomedia.com
www.friedmanandbruya.com

October 11, 2023

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on September 29, 2023 from the Whidbey 0204475-001, F&BI 309532 project. There are 49 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1011R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 29, 2023 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey 0204475-001, F&BI 309532 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
309532 -01	MW-4S
309532 -02	MW-2S
309532 -03	MW-6S
309532 -04	MW-9D
309532 -05	MW-12D
309532 -06	FD-01

The samples were sent to Fremont Analytical for anions, RSK 175 dissolved gases, sulfide, alkalinity, ammonia, and TOC analyses. The report is enclosed.

The 8260D calibration standard failed the acceptance criteria for acetone. The data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for samples MW-2S, MW-9D, and FD-01. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/03/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-4S 309532-01 1/10	12,000	128
MW-2S 309532-02	<100	125
MW-6S 309532-03	210	129
MW-9D 309532-04 1/20	73,000	130
MW-12D 309532-05 1/20	50,000	133
FD-01 309532-06 1/20	73,000	131
Method Blank 03-2220 MB	<100	130

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/02/23
Date Analyzed: 10/02/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-4S 309532-01 1/1.2	1,300 x	<300	102
MW-2S 309532-02	460 x	910 x	84
MW-6S 309532-03 1/1.3	80 x	<320	103
MW-9D 309532-04	7,500 x	<250	95
MW-12D 309532-05	5,100 x	<250	103
FD-01 309532-06	1,900 x	<250	83
Method Blank 03-2353 MB	<50	<250	108

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	309532-01.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.26
Lead	<1
Manganese	464

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2S f	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	309532-02.173
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.50
Lead	<1
Manganese	9.27

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	309532-03.177
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12.2
Lead	<1
Manganese	138

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	309532-04.178
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22.3
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 x100
Date Analyzed:	10/04/23	Data File:	309532-04 x100.041
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,660

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/02/23	Data File:	309532-05.185
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	18.9
Lead	2.35

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 x100
Date Analyzed:	10/04/23	Data File:	309532-05 x100.042
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	4,300

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/02/23	Data File:	309532-06.188
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	28.5
Lead	2.72

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 x100
Date Analyzed:	10/03/23	Data File:	309532-06 x100.068
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,870

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-770 mb
Date Analyzed:	10/02/23	Data File:	I3-770 mb.158
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-771 mb
Date Analyzed:	10/02/23	Data File:	I3-771 mb.160
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	309532-01.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.82
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	309532-02.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.95
Lead	1.70

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	309532-03.127
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.49
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	309532-04.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	49.6
Lead	12.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/02/23	Data File:	309532-05.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	21.1
Lead	2.72

Analysis For Total Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/02/23	Data File:	309532-06.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	49.2
Lead	12.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	I3-765 mb
Date Analyzed:	10/02/23	Data File:	I3-765 mb.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01 1/20
Date Analyzed:	10/02/23	Data File:	100226.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<20	1,3-Dichloropropane	<20
Chloromethane	<200	Tetrachloroethene	<20
Vinyl chloride	<0.4	Dibromochloromethane	<10
Bromomethane	<100	1,2-Dibromoethane (EDB)	<0.2
Chloroethane	<20	Chlorobenzene	<20
Trichlorofluoromethane	<20	Ethylbenzene	<20
Acetone	<1,000 ca	1,1,1,2-Tetrachloroethane	<20
1,1-Dichloroethene	<20	m,p-Xylene	<40
Hexane	<100	o-Xylene	<20
Methylene chloride	<100	Styrene	<20
Methyl t-butyl ether (MTBE)	<20	Isopropylbenzene	79
trans-1,2-Dichloroethene	<20	Bromoform	<100
1,1-Dichloroethane	<20	n-Propylbenzene	160
2,2-Dichloropropane	<20	Bromobenzene	<20
cis-1,2-Dichloroethene	<20	1,3,5-Trimethylbenzene	350
Chloroform	<20	1,1,2,2-Tetrachloroethane	<4
2-Butanone (MEK)	<400	1,2,3-Trichloropropane	<20
1,2-Dichloroethane (EDC)	<4	2-Chlorotoluene	<20
1,1,1-Trichloroethane	<20	4-Chlorotoluene	<20
1,1-Dichloropropene	<20	tert-Butylbenzene	<20
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	1,400
Benzene	<7	sec-Butylbenzene	<20
Trichloroethene	<4 j	p-Isopropyltoluene	<20
1,2-Dichloropropane	<20	1,3-Dichlorobenzene	<20
Bromodichloromethane	<10	1,4-Dichlorobenzene	<20
Dibromomethane	<20	1,2-Dichlorobenzene	<20
4-Methyl-2-pentanone	<200	1,2-Dibromo-3-chloropropane	<200
cis-1,3-Dichloropropene	<8	1,2,4-Trichlorobenzene	<20
Toluene	<20	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<8	Naphthalene	<20
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<20
2-Hexanone	<200		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02
Date Analyzed:	10/02/23	Data File:	100224.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/02/23	Data File:	100225.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	7.4
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	7.3
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	1.1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	2.4
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	12
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	5.7
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 1/100
Date Analyzed:	10/02/23	Data File:	100227.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	2,700
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	11,000
Hexane	<500	o-Xylene	5,000
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	290
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	720
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,500
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<4 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,500	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	810
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 1/100
Date Analyzed:	10/02/23	Data File:	100228.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	1,900
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	7,200
Hexane	<500	o-Xylene	2,800
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	180
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	570
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,000
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<4 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	3,100	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	700
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 1/100
Date Analyzed:	10/02/23	Data File:	100229.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	2,600
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	11,000
Hexane	<500	o-Xylene	4,800
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	280
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	720
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,500
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<4 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,500	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	820
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	03-2304 mb
Date Analyzed:	10/02/23	Data File:	100208.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.04 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-01
Date Analyzed:	10/02/23	Data File:	100224.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	84	11	173
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	116	10	140
Terphenyl-d14	93	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.46
2-Methylnaphthalene	0.43
1-Methylnaphthalene	5.3
Acenaphthylene	<0.02
Acenaphthene	0.063
Fluorene	0.045
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02 1/2
Date Analyzed:	10/03/23	Data File:	100229.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	11	173
2-Fluorobiphenyl	60	25	128
2,4,6-Tribromophenol	92	10	140
Terphenyl-d14	75 J	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.45
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	0.077
Anthracene	<0.04
Fluoranthene	0.093
Benz(a)anthracene	<0.04 J
Chrysene	<0.04 J
Benzo(a)pyrene	0.053
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04
Benzo(g,h,i)perylene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-02 1/4
Date Analyzed:	10/03/23	Data File:	100308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67 d	11	173
2-Fluorobiphenyl	62 d	25	128
2,4,6-Tribromophenol	98 d	10	140
Terphenyl-d14	81 d	50	150

Compounds:	Concentration ug/L (ppb)
Pyrene	0.087
Benz(a)anthracene	<0.08
Chrysene	<0.08

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-03
Date Analyzed:	10/03/23	Data File:	100307.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	11	173
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	96	10	140
Terphenyl-d14	102	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.52
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.030
Anthracene	<0.02
Fluoranthene	0.023
Pyrene	0.056
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04
Date Analyzed:	10/02/23	Data File:	100225.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	61	11	173
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	112	10	140
Terphenyl-d14	84 J	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.24
Fluorene	0.74
Phenanthrene	1.1
Anthracene	0.50
Fluoranthene	0.15
Pyrene	0.24 J
Benz(a)anthracene	0.19 J
Chrysene	0.066 J
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.077
Benzo(k)fluoranthene	0.034
Indeno(1,2,3-cd)pyrene	0.037
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.064

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-04 1/200
Date Analyzed:	10/03/23	Data File:	100312.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	100 d	11	173
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	0 d	10	140
Terphenyl-d14	80 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	550
2-Methylnaphthalene	220
1-Methylnaphthalene	100
Pyrene	<4
Benz(a)anthracene	<4
Chrysene	<4

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05
Date Analyzed:	10/03/23	Data File:	100226.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	72	11	173
2-Fluorobiphenyl	84	25	128
2,4,6-Tribromophenol	120	10	140
Terphenyl-d14	86	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.083
Fluorene	0.10
Phenanthrene	0.16
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-05 1/100
Date Analyzed:	10/03/23	Data File:	100314.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80 d	11	173
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	173 d	10	140
Terphenyl-d14	70 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	360
2-Methylnaphthalene	94
1-Methylnaphthalene	40

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06
Date Analyzed:	10/03/23	Data File:	100227.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	11	173
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	111	10	140
Terphenyl-d14	80 J	50	150

Compounds:	Concentration ug/L (ppb)
Acenaphthylene	<0.02
Acenaphthene	0.20
Fluorene	0.63
Phenanthrene	0.97
Anthracene	0.42
Fluoranthene	0.14
Pyrene	0.20 J
Benz(a)anthracene	0.16 J
Chrysene	0.056 J
Benzo(a)pyrene	0.14
Benzo(b)fluoranthene	0.071
Benzo(k)fluoranthene	0.030
Indeno(1,2,3-cd)pyrene	0.027
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.052

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	09/29/23	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	309532-06 1/200
Date Analyzed:	10/03/23	Data File:	100313.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60 d	11	173
2-Fluorobiphenyl	60 d	25	128
2,4,6-Tribromophenol	0 d	10	140
Terphenyl-d14	80 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	520
2-Methylnaphthalene	200
1-Methylnaphthalene	95
Pyrene	<4
Benz(a)anthracene	<4
Chrysene	<4

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey 0204475-001
Date Extracted:	10/02/23	Lab ID:	03-2352 mb
Date Analyzed:	10/02/23	Data File:	100206.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	94	11	173
2-Fluorobiphenyl	93	25	128
2,4,6-Tribromophenol	78	10	140
Terphenyl-d14	103	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532
Date Extracted: 10/02/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-4S 309532-01	<5
MW-6S 309532-03	<5
MW-9D 309532-04	18
MW-12D 309532-05	42
FD-01 309532-06	49
Method Blank I3-768	<5

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 309532-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	210	200	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	128	128	72-139	0

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 309501-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	1.89	98	97	75-125	1
Lead	ug/L (ppb)	10	<1	78	77	75-125	1
Manganese	ug/L (ppb)	20	4,560	0 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-120
Lead	ug/L (ppb)	10	99	80-120
Manganese	ug/L (ppb)	20	95	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 309532-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	18.9	102 b	97 b	75-125	5 b
Lead	ug/L (ppb)	10	2.35	85 b	84 b	75-125	1 b
Manganese	ug/L (ppb)	20	3,770	147 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Lead	ug/L (ppb)	10	96	80-120
Manganese	ug/L (ppb)	20	93	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 309532-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	3.82	104 b	101 b	75-125	3 b
Lead	ug/L (ppb)	10	<1	89	90	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	97	80-120
Lead	ug/L (ppb)	10	92	80-120

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	ug/L (ppb)	10	99	102	59-132	3
Vinyl chloride	ug/L (ppb)	10	102	102	64-142	0
Bromomethane	ug/L (ppb)	10	107	107	50-197	0
Chloroethane	ug/L (ppb)	10	105	109	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	100	102	51-159	2
Acetone	ug/L (ppb)	50	50	52	10-140	4
1,1-Dichloroethene	ug/L (ppb)	10	96	99	64-140	3
Hexane	ug/L (ppb)	10	92	85	54-136	8
Methylene chloride	ug/L (ppb)	10	92	96	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	97	100	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	107	109	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	96	98	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	105	105	64-148	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	111	70-130	5
Chloroform	ug/L (ppb)	10	94	96	70-130	2
2-Butanone (MEK)	ug/L (ppb)	50	70	72	47-112	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	98	96	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	97	99	70-130	2
1,1-Dichloropropene	ug/L (ppb)	10	95	95	70-130	0
Carbon tetrachloride	ug/L (ppb)	10	98	100	70-130	2
Benzene	ug/L (ppb)	10	105	105	70-130	0
Trichloroethene	ug/L (ppb)	10	100	98	70-130	2
1,2-Dichloropropane	ug/L (ppb)	10	98	99	70-130	1
Bromodichloromethane	ug/L (ppb)	10	99	96	70-130	3
Dibromomethane	ug/L (ppb)	10	98	98	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	101	103	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	101	100	69-131	1
Toluene	ug/L (ppb)	10	106	105	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	100	97	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	100	99	70-130	1
2-Hexanone	ug/L (ppb)	50	86	87	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	106	100	70-130	6
Tetrachloroethene	ug/L (ppb)	10	107	105	70-130	2
Dibromochloromethane	ug/L (ppb)	10	106	106	60-148	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	105	102	70-130	3
Chlorobenzene	ug/L (ppb)	10	101	100	70-130	1
Ethylbenzene	ug/L (ppb)	10	107	106	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	103	102	70-130	1
m,p-Xylene	ug/L (ppb)	20	103	103	70-130	0
o-Xylene	ug/L (ppb)	10	103	103	70-130	0
Styrene	ug/L (ppb)	10	101	100	70-130	1
Isopropylbenzene	ug/L (ppb)	10	102	104	70-130	2
Bromoform	ug/L (ppb)	10	105	100	69-138	5
n-Propylbenzene	ug/L (ppb)	10	99	101	70-130	2
Bromobenzene	ug/L (ppb)	10	99	104	70-130	5
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	103	70-130	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	103	107	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	98	99	70-130	1
2-Chlorotoluene	ug/L (ppb)	10	99	99	70-130	0
4-Chlorotoluene	ug/L (ppb)	10	100	98	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	99	99	70-130	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
sec-Butylbenzene	ug/L (ppb)	10	101	102	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	103	104	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,4-Dichlorobenzene	ug/L (ppb)	10	100	101	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	104	104	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	100	101	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	101	99	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	100	96	70-130	4
Naphthalene	ug/L (ppb)	10	102	102	70-130	0
1,2,3-Trichlorobenzene	ug/L (ppb)	10	103	99	70-130	4

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	75	68	62-97	10
2-Methylnaphthalene	ug/L (ppb)	5	81	71	64-101	13
1-Methylnaphthalene	ug/L (ppb)	5	81	71	64-103	13
Acenaphthylene	ug/L (ppb)	5	80	77	70-130	4
Acenaphthene	ug/L (ppb)	5	80	75	70-130	6
Fluorene	ug/L (ppb)	5	84	81	70-130	4
Phenanthrene	ug/L (ppb)	5	91	88	70-130	3
Anthracene	ug/L (ppb)	5	87	83	70-130	5
Fluoranthene	ug/L (ppb)	5	96	92	70-130	4
Pyrene	ug/L (ppb)	5	95	95	70-130	0
Benz(a)anthracene	ug/L (ppb)	5	93	91	70-130	2
Chrysene	ug/L (ppb)	5	93	91	70-130	2
Benzo(a)pyrene	ug/L (ppb)	5	93	91	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	5	91	91	70-130	0
Benzo(k)fluoranthene	ug/L (ppb)	5	91	90	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	105	93	70-130	12
Dibenz(a,h)anthracene	ug/L (ppb)	5	100	92	70-130	8
Benzo(g,h,i)perylene	ug/L (ppb)	5	102	95	70-130	7

Date of Report: 10/11/23
Date Received: 09/29/23
Project: Whidbey 0204475-001, F&BI 309532

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 309493-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	3.5	3.5	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	82	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

309532

SAMPLE CHAIN OF CUSTODY

09-29-23 vw6/14/14

Page # 1 of 1

Report To Heather Good Victoria Pehlivan

Company Hart & Aldrich

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey	210475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	MTBE BTEX EPA 8021	EDB/EDC NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MEE	TSS	Tot/Dis. As Pb Mn Sb	MNA Parameters	* insufficient volume for tests Notes ME 10/10/23
MW-4S	01 A-Q	9/28/23	1240	H2O	17	X	X	X	X	X	X		X	X	X	X	Low recovery
MW-2S	02 A-F		1400		6	X	X	X	X	X	X		X	X	X	X	Low recovery
MW-6S	03 A-Q		1650		17	X	X	X	X	X	X		X	X	X	X	
MW-9D	04		1205		17	X	X	X	X	X	X		X	X	X	X	
MW-12D	05		1005		17	X	X	X	X	X	X		X	X	X	X	MNA Parameters
FD-01	06	↓	1230	↓	17	X	X	X	X	X	X		X	X	X	X	nitrate, nitrite
																	ammonia, TOC,
																	chloride, sulfate
																	Samples received at 4 °C alkalinity, sulfide
																	dissolved manganese

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Dakkura	HA	9/29/23	905
Received by:	Eric Power	FEB	9/29/23	905
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

AW

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

November 21, 2023

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on September 28, 2023 from the Whidbey Island, F&BI 309479 project. Per your request, the 8260D trichloroethene reporting limits were lowered to <4 ug/L.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1009R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

October 9, 2023

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on September 28, 2023 from the Whidbey Island, F&BI 309479 project. There are 42 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1009R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 28, 2023 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Island, F&BI 309479 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
309479 -01	MW-17D-GW
309479 -02	MW-8S-GW
309479 -03	MW-13D-GW
309479 -04	MW-15D-GW
309479 -05	MW-16D-GW

The samples were sent to Fremont Analytical for anions, RSK 175 dissolved gases, sulfide, alkalinity, ammonia, and TOC analyses. The report is enclosed.

The 8260D calibration standard failed the acceptance criteria for acetone. The data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for sample MW-13D-GW. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479
Date Extracted: 10/03/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-17D-GW 309479-01 1/10	9,800	99
MW-8S-GW 309479-02 1/10	4,700	114
MW-13D-GW 309479-03 1/20	26,000	105
MW-15D-GW 309479-04	<100	100
MW-16D-GW 309479-05	<100	98
Method Blank 03-2219 MB	<100	100

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479
Date Extracted: 09/29/23
Date Analyzed: 09/29/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-17D-GW 309479-01	860 x	<250	140
MW-8S-GW 309479-02	1,400 x	<250	135
MW-13D-GW 309479-03 1/1.2	3,500 x	<300	132
MW-15D-GW 309479-04 1/1.2	84 x	<300	137
MW-16D-GW 309479-05 1/1.3	90 x	<320	137
Method Blank 03-2345 MB2	<50	<250	140

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-01
Date Analyzed:	10/02/23	Data File:	309479-01.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	36.7
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-01 x100
Date Analyzed:	10/03/23	Data File:	309479-01 x100.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	3,720

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-02
Date Analyzed:	10/02/23	Data File:	309479-02.190
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.00
Lead	<1
Manganese	502

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-03
Date Analyzed:	10/02/23	Data File:	309479-03.191
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.4
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-03 x100
Date Analyzed:	10/03/23	Data File:	309479-03 x100.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,510

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-15D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-04
Date Analyzed:	10/02/23	Data File:	309479-04.192
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.43
Lead	<1
Manganese	5.47

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-16D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	309479-05
Date Analyzed:	10/02/23	Data File:	309479-05.193
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.85
Lead	<1
Manganese	2.40

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/02/23	Lab ID:	I3-770 mb
Date Analyzed:	10/02/23	Data File:	I3-770 mb.158
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-01
Date Analyzed:	09/29/23	Data File:	309479-01.077
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	34.0
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8S-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-02
Date Analyzed:	09/29/23	Data File:	309479-02.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.10
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-03
Date Analyzed:	09/29/23	Data File:	309479-03.079
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.4
Lead	1.12

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-15D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-04
Date Analyzed:	09/29/23	Data File:	309479-04.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.79
Lead	1.55

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-16D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-05
Date Analyzed:	09/29/23	Data File:	309479-05.084
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.38
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	I3-760 mb
Date Analyzed:	09/29/23	Data File:	I3-760 mb.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/03/23	Lab ID:	309479-01 1/10
Date Analyzed:	10/03/23	Data File:	100325.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	71	132
Toluene-d8	116	68	139
4-Bromofluorobenzene	97	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	540
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	1,200
Hexane	<50	o-Xylene	360
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	16
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	43
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	79
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	290
Benzene	200	sec-Butylbenzene	<10
Trichloroethene	11	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	430	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	130
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8S-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/05/23	Lab ID:	309479-02
Date Analyzed:	10/05/23	Data File:	100510.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	54	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	59
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	60
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	150
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	67	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	130
Benzene	<0.35	sec-Butylbenzene	8.4
Trichloroethene	<0.5	p-Isopropyltoluene	4.2
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	28
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/03/23	Lab ID:	309479-03 1/20
Date Analyzed:	10/03/23	Data File:	100326.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	71	132
Toluene-d8	111	68	139
4-Bromofluorobenzene	95	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<20	1,3-Dichloropropane	<20
Chloromethane	<200	Tetrachloroethene	<20
Vinyl chloride	<0.4	Dibromochloromethane	<10
Bromomethane	<100	1,2-Dibromoethane (EDB)	<20
Chloroethane	<20	Chlorobenzene	<20
Trichlorofluoromethane	<20	Ethylbenzene	910
Acetone	<1,000 ca	1,1,1,2-Tetrachloroethane	<20
1,1-Dichloroethene	<20	m,p-Xylene	3,700
Hexane	160	o-Xylene	680
Methylene chloride	<100	Styrene	<20
Methyl t-butyl ether (MTBE)	<20	Isopropylbenzene	53
trans-1,2-Dichloroethene	<20	Bromoform	<100
1,1-Dichloroethane	<20	n-Propylbenzene	98
2,2-Dichloropropane	<20	Bromobenzene	<20
cis-1,2-Dichloroethene	<20	1,3,5-Trimethylbenzene	230
Chloroform	<20	1,1,2,2-Tetrachloroethane	<4
2-Butanone (MEK)	<400	1,2,3-Trichloropropane	<20
1,2-Dichloroethane (EDC)	<4	2-Chlorotoluene	<20
1,1,1-Trichloroethane	<20	4-Chlorotoluene	<20
1,1-Dichloropropene	<20	tert-Butylbenzene	<20
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	660
Benzene	<7	sec-Butylbenzene	<20
Trichloroethene	<4 j	p-Isopropyltoluene	<20
1,2-Dichloropropane	<20	1,3-Dichlorobenzene	<20
Bromodichloromethane	<10	1,4-Dichlorobenzene	<20
Dibromomethane	<20	1,2-Dichlorobenzene	<20
4-Methyl-2-pentanone	<200	1,2-Dibromo-3-chloropropane	<200
cis-1,3-Dichloropropene	<8	1,2,4-Trichlorobenzene	<20
Toluene	160	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<8	Naphthalene	250
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<20
2-Hexanone	<200		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-15D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/03/23	Lab ID:	309479-04
Date Analyzed:	10/03/23	Data File:	100323.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	109	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-16D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/03/23	Lab ID:	309479-05
Date Analyzed:	10/03/23	Data File:	100324.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	71	132
Toluene-d8	111	68	139
4-Bromofluorobenzene	99	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Island, F&BI 309479
Date Extracted:	10/03/23	Lab ID:	03-2309 mb
Date Analyzed:	10/03/23	Data File:	100308.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	LM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.12 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-01
Date Analyzed:	09/29/23	Data File:	092911.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	105	15	144
2-Fluorobiphenyl	114	25	128
2,4,6-Tribromophenol	92	10	142
Terphenyl-d14	126	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	79 ve
2-Methylnaphthalene	20
1-Methylnaphthalene	9.1
Acenaphthylene	<0.02
Acenaphthene	0.044
Fluorene	0.032
Phenanthrene	0.026
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-01 1/10
Date Analyzed:	10/02/23	Data File:	100210.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	103 d	15	144
2-Fluorobiphenyl	113 d	25	128
2,4,6-Tribromophenol	103 d	10	142
Terphenyl-d14	141 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	93

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-02
Date Analyzed:	09/29/23	Data File:	092912.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	107	15	144
2-Fluorobiphenyl	105	25	128
2,4,6-Tribromophenol	100	10	142
Terphenyl-d14	135	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	19
2-Methylnaphthalene	49 ve
1-Methylnaphthalene	47 ve
Acenaphthylene	<0.02
Acenaphthene	0.27
Fluorene	0.14
Phenanthrene	0.069
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-02 1/10
Date Analyzed:	10/02/23	Data File:	100211.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	95 d	15	144
2-Fluorobiphenyl	102 d	25	128
2,4,6-Tribromophenol	113 d	10	142
Terphenyl-d14	128 d	41	138

Compounds:	Concentration ug/L (ppb)
2-Methylnaphthalene	53
1-Methylnaphthalene	58

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-03
Date Analyzed:	09/29/23	Data File:	092913.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	99	15	144
2-Fluorobiphenyl	50 J	25	128
2,4,6-Tribromophenol	59 J	10	142
Terphenyl-d14	116	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	110 ve
2-Methylnaphthalene	52 ve
1-Methylnaphthalene	32
Acenaphthylene	<0.02 J
Acenaphthene	<0.02 J
Fluorene	0.027 J
Phenanthrene	0.066
Anthracene	<0.02
Fluoranthene	0.022
Pyrene	0.060
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-13D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-03 1/100
Date Analyzed:	10/02/23	Data File:	100212.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	110 d	15	144
2-Fluorobiphenyl	90 d	25	128
2,4,6-Tribromophenol	280 d	10	142
Terphenyl-d14	110 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	150
2-Methylnaphthalene	51
Acenaphthylene	<2
Acenaphthene	<2
Fluorene	<2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-15D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-04
Date Analyzed:	10/02/23	Data File:	100209.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	15	144
2-Fluorobiphenyl	101	25	128
2,4,6-Tribromophenol	95	10	142
Terphenyl-d14	139 vo	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.76
2-Methylnaphthalene	0.33
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	0.028
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-16D-GW	Client:	Haley & Aldrich, Inc
Date Received:	09/28/23	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	309479-05
Date Analyzed:	09/29/23	Data File:	092915.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	93	15	144
2-Fluorobiphenyl	99	25	128
2,4,6-Tribromophenol	85	10	142
Terphenyl-d14	124	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Island, F&BI 309479
Date Extracted:	09/29/23	Lab ID:	03-2350 mb
Date Analyzed:	09/29/23	Data File:	092905.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	110	15	144
2-Fluorobiphenyl	101	25	128
2,4,6-Tribromophenol	86	10	142
Terphenyl-d14	131	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479
Date Extracted: 10/02/23
Date Analyzed: 10/03/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-17D-GW 309479-01	55
MW-8S-GW 309479-02	60
MW-13D-GW 309479-03	19
MW-15D-GW 309479-04	78
MW-16D-GW 309479-05	6.4
Method Blank I3-768 MB	<5

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 309479-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	128	65-151	10

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 309532-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	18.9	102 b	97 b	70-130	5 b
Lead	ug/L (ppb)	10	2.35	85 b	84 b	70-130	1 b
Manganese	ug/L (ppb)	20	3,770	147 b	0 b	70-130	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	85-115
Lead	ug/L (ppb)	10	96	85-115
Manganese	ug/L (ppb)	20	93	85-115

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 309470-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	90	89	75-125	1
Lead	ug/L (ppb)	10	<1	88	87	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Lead	ug/L (ppb)	10	93	80-120

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 309503-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	97	30-221
Chloromethane	ug/L (ppb)	10	<10	98	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	98	50-150
Bromomethane	ug/L (ppb)	10	<5	102	50-150
Chloroethane	ug/L (ppb)	10	<1	102	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	96	50-150
Acetone	ug/L (ppb)	50	<50	50	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	92	50-150
Hexane	ug/L (ppb)	10	<5	86	50-150
Methylene chloride	ug/L (ppb)	10	<5	94	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	91	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	93	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	85	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	10-211
Chloroform	ug/L (ppb)	10	<1	93	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	71	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	100	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	94	50-150
Benzene	ug/L (ppb)	10	<0.35	105	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	101	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	96	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	98	50-150
Dibromomethane	ug/L (ppb)	10	<1	97	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	100	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	92	50-150
Toluene	ug/L (ppb)	10	<1	106	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	96	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	102	50-150
2-Hexanone	ug/L (ppb)	50	<10	103	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	101	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	108	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	103	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	106	50-150
Chlorobenzene	ug/L (ppb)	10	<1	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	106	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	<2	104	50-150
o-Xylene	ug/L (ppb)	10	<1	104	50-150
Styrene	ug/L (ppb)	10	<1	104	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	102	50-150
Bromoform	ug/L (ppb)	10	<5	106	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	100	50-150
Bromobenzene	ug/L (ppb)	10	<1	103	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	102	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	113	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	104	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	102	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	101	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	99	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	102	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	102	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	103	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	102	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	105	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	98	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	95	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	97	50-150
Naphthalene	ug/L (ppb)	10	<1	98	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	99	50-150

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	100	100	46-206	0
Chloromethane	ug/L (ppb)	10	97	98	59-132	1
Vinyl chloride	ug/L (ppb)	10	99	99	64-142	0
Bromomethane	ug/L (ppb)	10	100	101	50-197	1
Chloroethane	ug/L (ppb)	10	100	101	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	96	97	51-159	1
Acetone	ug/L (ppb)	50	49	50	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	92	93	64-140	1
Hexane	ug/L (ppb)	10	95	98	54-136	3
Methylene chloride	ug/L (ppb)	10	92	89	43-134	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	92	93	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	102	104	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	92	94	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	105	103	64-148	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	102	103	70-130	1
Chloroform	ug/L (ppb)	10	91	95	70-130	4
2-Butanone (MEK)	ug/L (ppb)	50	78	71	47-112	9
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	97	99	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	93	95	70-130	2
1,1-Dichloropropene	ug/L (ppb)	10	92	96	70-130	4
Carbon tetrachloride	ug/L (ppb)	10	95	98	70-130	3
Benzene	ug/L (ppb)	10	104	106	70-130	2
Trichloroethene	ug/L (ppb)	10	99	102	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	100	70-130	1
Bromodichloromethane	ug/L (ppb)	10	97	97	70-130	0
Dibromomethane	ug/L (ppb)	10	95	97	70-130	2
4-Methyl-2-pentanone	ug/L (ppb)	50	98	104	68-130	6
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	101	69-131	1
Toluene	ug/L (ppb)	10	108	110	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	107	108	70-130	1
1,1,2-Trichloroethane	ug/L (ppb)	10	103	105	70-130	2
2-Hexanone	ug/L (ppb)	50	93	101	45-138	8
1,3-Dichloropropane	ug/L (ppb)	10	110	111	70-130	1
Tetrachloroethene	ug/L (ppb)	10	111	111	70-130	0
Dibromochloromethane	ug/L (ppb)	10	104	109	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	107	110	70-130	3
Chlorobenzene	ug/L (ppb)	10	101	104	70-130	3
Ethylbenzene	ug/L (ppb)	10	108	111	70-130	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	102	107	70-130	5
m,p-Xylene	ug/L (ppb)	20	106	108	70-130	2
o-Xylene	ug/L (ppb)	10	104	107	70-130	3
Styrene	ug/L (ppb)	10	103	108	70-130	5
Isopropylbenzene	ug/L (ppb)	10	104	107	70-130	3
Bromoform	ug/L (ppb)	10	106	111	69-138	5
n-Propylbenzene	ug/L (ppb)	10	105	104	70-130	1
Bromobenzene	ug/L (ppb)	10	104	105	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	106	105	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	108	111	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	102	105	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	102	104	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	103	104	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	103	103	70-130	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	103	104	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	104	105	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	107	106	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	105	107	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	104	105	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	106	106	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	102	99	70-130	3
1,2,4-Trichlorobenzene	ug/L (ppb)	10	101	99	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	103	104	70-130	1
Naphthalene	ug/L (ppb)	10	102	101	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	103	100	70-130	3

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	78	81	50-104	4
2-Methylnaphthalene	ug/L (ppb)	5	92	96	52-113	4
1-Methylnaphthalene	ug/L (ppb)	5	95	100	51-115	5
Acenaphthylene	ug/L (ppb)	5	90	94	60-114	4
Acenaphthene	ug/L (ppb)	5	89	93	57-110	4
Fluorene	ug/L (ppb)	5	97	99	61-115	2
Phenanthrene	ug/L (ppb)	5	94	96	63-113	2
Anthracene	ug/L (ppb)	5	98	100	65-117	2
Fluoranthene	ug/L (ppb)	5	97	91	68-121	6
Pyrene	ug/L (ppb)	5	101	112	62-133	10
Benz(a)anthracene	ug/L (ppb)	5	105	108	66-131	3
Chrysene	ug/L (ppb)	5	108	107	66-129	1
Benzo(a)pyrene	ug/L (ppb)	5	108	105	66-129	3
Benzo(b)fluoranthene	ug/L (ppb)	5	96	94	55-144	2
Benzo(k)fluoranthene	ug/L (ppb)	5	104	99	58-139	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	117	116	62-136	1
Dibenz(a,h)anthracene	ug/L (ppb)	5	120	115	55-146	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	117	117	58-137	0

Date of Report: 10/09/23
Date Received: 09/28/23
Project: Whidbey Island, F&BI 309479

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 309493-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	3.5	3.5	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	82	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

309479

SAMPLE CHAIN OF CUSTODY

09/28/23 JW5/L3/I4

Page # 1 of 1

Report To Heather Grout

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email HGrout@haleyaldrich.com

SAMPLERS (*signature*)	
PROJECT NAME: Whitbeit Island	PO #
REMARKS Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	tot. & Dis. lead by SM 3125	EDB, EDC, MTBE	TOC	TSS	Geochem *	Notes
MW-17D-GW	01A-Q	9/27/23	1510	W	17	X	X			X	X	X	X	X	X	X	*: Nitrate, Nitrite,
MW-BD-GW	02	9/27/23	1500	W	17												chloride, sulfate,
MW-13D-GW	03		1050														ammonia, alkalinity
MW-15D-GW	04		1105														sulfide, MEE,
MW-16D-GW	05		1310														dissolved manganese
																	CC kpehlivan@
																	haleyAldrich.com
																	on all results.

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	ZACH STEPHENS	H&A	9/28/23	0730
Received by:	ERIC YOUNG	F+O	9/28/23	0825
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Data Usability Summary Report

Project Name: Whidbey Marine & Auto Supply

Project Description: Groundwater Samples

Sample Date(s): August 2024

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, WA

Fremont Analytical, Inc. (Alliance Technical Group) – Seattle, WA

Validation Performed by: Eric Hitchens

Validation Reviewed by: Gabrielle Davis

Validation Date: 5 September 2024

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Groups (SDGs) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Group Numbers**
2. **Precision and Accuracy [for SDG(s) above]**
3. **Explanations**
4. **Glossary**
5. **Abbreviations**
6. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- National Functional Guidelines (NFG) for Organic Data Review.

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Group Numbers

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1A. Analyses were performed on the samples listed in Table 1B. Samples were collected, preserved, and shipped following standard chain of custody (COC) protocols. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Custody seals were not used when samples were dropped off at the laboratory or service center by the field staff, submitted to a laboratory-provided courier, or when transported between subcontracted laboratories.
- The number of sample containers received at the laboratory did not match the COCs; the laboratories proceeded with analysis, and no qualifiers were applied.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues, such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances. Since these additional quality control issues were not required for the project's DQOs, these quality control issues were not reviewed.

1.3 MULTIPLE SAMPLE RESULTS

The laboratory reported multiple results for Nitrite for samples MW-2S and MW-3S. Both sets of results were reported and were qualified as noted in other sections of this report.

1.4 HOLDING TIMES/PRESERVATION

Method holding times are listed in Table 2A. The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol. Any exceptions are noted in Table 2B.

1.5 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified. Exceedances of the calibration curve are noted in Table 3.

1.6 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory-specified quality control (QC) limits.

1.7 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits. Any exceptions are noted in Table 4.

1.8 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. The samples listed in Table 5 were used for matrix spike/matrix spike duplicate (MS/MSD) analysis. The MS/MSD percent recovery (%R) and the relative percent difference (RPD) between the MS and MSD results were within the specified limits, with the following exceptions:

- The %R for ammonia in the MS/MSD pair associated with MW-12D recovered low, and data in the associated analytical batches were qualified UJ.

1.9 BLANK SAMPLE ANALYSIS

Refer to Section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

1.10 DUPLICATE SAMPLE ANALYSIS

Refer to Section E 1.6. The following samples listed in Table 6A were used for laboratory duplicate analysis, and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL).

The samples listed in Table 6B were used for field duplicate analysis. RPDs were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the RL).

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. A summary of qualifiers applied to this dataset is shown in Table 7.

2. Precision and Accuracy [for SDG(s) above]

Refer to Section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post-digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - µg/kg micrograms per kilogram
  - µg/L micrograms per liter
  - µg/m^3 micrograms per cubic meter
  - mg/kg milligrams per kilogram
  - mg/L milligrams per liter
  - ppb v/v parts per billion volume/volume
  - pCi/L picocuries per liter
  - pg/g picograms per gram
  - pg/L picograms per liter
- Matrices:
  - AA Ambient Air
  - GS Soil Gas
  - GW/WG Groundwater
  - QW Water Quality
  - IA Indoor Air
  - SE Sediment
  - SO Soil
  - SSV Sub-slab Vapor
  - WQ Water Quality control matrix
  - WS Surface Water
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)

- Fractions:
  - N Normal (method cannot be filtered)
  - D Dissolved (filtered)
  - T Total (unfiltered)

5. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
%v/v	Percent volume by volume
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DoD	Department of Defense
DQO	data quality objective
DUSR	Data Usability Summary Report
EIS	Extraction Internal Standard
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
H_2	Hydrogen gas
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MBK	Method Blank Contamination
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	not applicable
ND	Non-Detect
NFG	National Functional Guidelines
NH_3	Ammonia
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorbutanoic Acid
PFD	Perfluorodecalin
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonate
PFPeA	Perfluoropentanoic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	Sampling Analysis Plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid-Phase Extraction
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Concentration (C) Qualifiers:

  U The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".

  B The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers:

  E The compound was quantitated above the calibration range.

  D The concentration is based on a diluted sample analysis.

- Validation Qualifiers:

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  J+ The result is an estimated quantity, but the result may be biased high.

  J- The result is an estimated quantity, but the result may be biased low.

  J/UJ as listed in exception tables J applies to detected data and UJ applies to non-detected data as reported by the laboratory.

  UJ The compound was not detected. The reported sample quantitation limit is approximate.

  NJ The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is an estimated concentration only.

  R The sample results were rejected as unusable; the compound may or may not be present in the sample.

  S Result is suspect. See DUSR for details.

References

1. United States Environmental Protection Agency, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.

2. United States Environmental Protection Agency, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Attachments:

Table 1A – Sample Delivery Groups
Table 1B – Sample Information
Table 2A – Method Holding Times
Table 2B – Holding Time Exceedances
Table 3 – Calibration Curve Exceedances
Table 4 – Laboratory Control Samples
Table 5 – Matrix Spike Samples
Table 6A – Laboratory Duplicate Samples
Table 6B – Field Duplicate Samples
Table 7 – System Performance Summary

TABLES

TABLE 1A
SAMPLE DELIVERY GROUPS
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Sample Delivery Group
408088
408136
408153

TABLE 1B
SAMPLE INFORMATION
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods[1]
MW-12D	N	408088-01	08/05/2024	WG	A, B, C, D, E, F
MW-21D	N	408088-05	08/05/2024	WG	A, B, D, E, F
MW-21D	N	408088 -05	08/05/2024	WG	C
MW-19D	N	408088-04	08/05/2024	WG	A, B, D, E, F
MW-22D	N	408088-06	08/05/2024	WG	A, B, D, E, F
MW-22D	N	408088 -06	08/05/2024	WG	C
MW-23D	N	408088-03	08/05/2024	WG	A, B, D, E, F
MW-23D	N	408088 -03	08/05/2024	WG	C
MW-18D	N	408088-02	08/05/2024	WG	A, B, D, E, F
MW-12D	N	2408076-001B	08/05/2024	WG	G, H
MW-12D	N	2408076-001A	08/05/2024	WG	I
MW-12D	N	2408076-001D	08/05/2024	WG	J, K
MW-12D	N	2408076-001C	08/05/2024	WG	L
MW-18D	N	2408076-002B	08/05/2024	WG	G, H
MW-23D	N	2408076-003B	08/05/2024	WG	G, H
MW-18D	N	2408076-002A	08/05/2024	WG	I
MW-18D	N	2408076-002D	08/05/2024	WG	J, K
MW-18D	N	2408076-002C	08/05/2024	WG	L
MW-21D	N	2408076-004B	08/05/2024	WG	G, H
MW-21D	N	2408076-004A	08/05/2024	WG	I
MW-21D	N	2408076-004D	08/05/2024	WG	J, K
MW-21D	N	2408076-004C	08/05/2024	WG	L
MW-23D	N	2408076-003A	08/05/2024	WG	I
MW-18D	N	408088 -02	08/05/2024	WG	C
MW-19D	N	408088 -04	08/05/2024	WG	C
MW-23D	N	2408076-003D	08/05/2024	WG	J, K
MW-23D	N	2408076-003C	08/05/2024	WG	L
MW-17D	N	408136-04	08/06/2024	WG	A, B, D, E, F
FD-01	FD	408136-06	08/06/2024	WG	A, B, D, E, F
MW-20D	N	408136-05	08/06/2024	WG	A, B, D, E, F
MW-20D	N	408136 -05	08/06/2024	WG	C
MW-6S	N	408136-01	08/06/2024	WG	A, B, C, D, E, F
MW-9D	N	408136-03	08/06/2024	WG	A, B, D, E, F
MW-17D	N	2408117-003A	08/06/2024	WG	G, H
MW-8S	N	408136-02	08/06/2024	WG	A, B, D, E, F
FD-01	FD	408136 -06	08/06/2024	WG	C
MW-17D	N	408136 -04	08/06/2024	WG	C
MW-8S	N	408136 -02	08/06/2024	WG	C
MW-9D	N	408136 -03	08/06/2024	WG	C
FD-01	FD	2408117-004A	08/06/2024	WG	G, H
FD-01	FD	2408117-004D	08/06/2024	WG	I
FD-01	FD	2408117-004B	08/06/2024	WG	J
FD-01	FD	2408117-004C	08/06/2024	WG	M
MW-17D	N	2408117-003D	08/06/2024	WG	I
MW-17D	N	2408117-003B	08/06/2024	WG	J
MW-17D	N	2408117-003C	08/06/2024	WG	M
MW-8S	N	2408117-001A	08/06/2024	WG	G, H

TABLE 1B
SAMPLE INFORMATION
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods[1]
MW-8S	N	2408117-001D	08/06/2024	WG	I
MW-8S	N	2408117-001B	08/06/2024	WG	J
MW-8S	N	2408117-001C	08/06/2024	WG	M
MW-9D	N	2408117-002A	08/06/2024	WG	G, H
MW-9D	N	2408117-002D	08/06/2024	WG	I
MW-9D	N	2408117-002B	08/06/2024	WG	J
MW-9D	N	2408117-002C	08/06/2024	WG	M
MW-2S	N	408153-01	08/07/2024	WG	A, B, C, D, E, F
MW-3S	N	408153-02	08/07/2024	WG	A, B, D, E, F
MW-3S	N	408153 -02	08/07/2024	WG	C
MW-2S	N	2408139-001C	08/07/2024	WG	G, H
MW-3S	N	2408139-002C	08/07/2024	WG	G, H
MW-2S	N	2408139-001D	08/07/2024	WG	I
MW-2S	N	2408139-001A	08/07/2024	WG	J, K
MW-2S	N	2408139-001B	08/07/2024	WG	M
MW-3S	N	2408139-002D	08/07/2024	WG	I
MW-3S	N	2408139-002A	08/07/2024	WG	J, K
MW-3S	N	2408139-002B	08/07/2024	WG	M

Notes:
1. See Table 2A

TABLE 2A
METHOD HOLDING TIMES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Letter Code	Method	Description	Holding Time(s)
A	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Diesel Range Organics	14 days for liquid, preserved 7 days for liquid unpreserved
B	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics	14 days for liquid, preserved 7 days for liquid unpreserved
C	SM2540D	Total Suspended Solids	7 days for liquid unpreserved
D	SW6020B	Metals	180 days for liquid, preserved
E	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved 7 days for liquid unpreserved
F	SW8270E	Semivolatile Organic Compounds (SVOCs)	7 days extraction / 40 days analysis for liquid, unpreserved
G	E300	Inorganic Anions	48 hours for nitrite, nitrate 28 days for sulfate
H	E310.2	Alkalinity	14 days for liquid, unpreserved
I	RSK175	Dissolved Gases	14 days for liquid, preserved 7 days for liquid unpreserved
J	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid, preserved
K	SM5310C	Total Organic Carbon	28 days for liquid, preserved
L	SM4500-S2-F	Sulfides	7 days for liquid, preserved
M	SM4500-S2-D	Total Sulfides	7 days for liquid, preserved

TABLE 2B
HOLDING TIME EXCEEDANCES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Sample ID	Method	Analyte	Qualifier
MW-2S	E300	Nitrite	UJ
MW-3S	E300	Nitrite	UJ
MW-18D	E300	Nitrate	J

TABLE 3
CALIBRATION CURVE EXCEEDANCES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Sample ID	Fraction	Analyte	Result	Qualifier
MW-2S	Dissolved	Iron	160	J
MW-3S	Dissolved	Iron	94	J
MW-8S	Not Applicable	Methylene chloride (Dichloromethane)	5.6	J

TABLE 4
LABORATORY CONTROL SAMPLES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

SDG	Sample Type	Batch	Analyte	%R/RPD	Qualifier	Qualifier
Multiple	LCS	44773	Sulfate	88.1	J-/UJ	All samples in the batch
408153	LCS	44773	Nitrite	89.1	UJ	MW-2S, MW-3S

TABLE 5
MATRIX SPIKE SAMPLES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

SDG	Laboratory ID	Method
408088	2408063-002AMS	EPA300.0
408088	2408063-002AMSD	EPA300.0
408088	2408097-002AMS	EPA300.0
408088	2408179-002BMS	SM4500NH3G
408088	MW-12DMS	SM4500NH3G
408088	MW-12DMS	SM5310C
408088	MW-12DMSD	SM4500NH3G
408088	MW-12DMSD	SM5310C
408088	MW-21DMS	SM4500-S2-F
408136	2408063-002AMS	EPA300.0
408136	2408063-002AMSD	EPA300.0
408136	2408076-001CMS	SM4500S2D
408136	2408076-001CMSD	SM4500S2D
408136	2408076-001DMS	SM4500NH3G
408136	2408076-001DMSD	SM4500NH3G
408136	2408097-002AMS	EPA300.0
408136	2408139-002BMS	SM4500S2D
408136	2408179-002BMS	SM4500NH3G
408153	2408076-001CMS	SM4500S2D
408153	2408076-001CMSD	SM4500S2D
408153	2408076-001DMS	SM5310C
408153	2408076-001DMSD	SM5310C
408153	2408124-009BMS	EPA300.0
408153	2408124-009BMSD	EPA300.0
408153	2408124-015BMS	EPA300.0
408153	2408139-002BMS	SM4500S2D
408153	2408139-002CMS	EPA300.0
408153	2408179-002BMS	SM4500NH3G
408153	2408189-001BMS	EPA300.0
408153	2408189-001BMSD	EPA300.0

TABLE 6A
LABORATORY DUPLICATE SAMPLES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

SDG	Laboratory ID	Method
408088	2408063-002ADUP	EPA300.0
408088	2408097-002ADUP	EPA300.0
408088	2408179-002BDUP	SM4500NH3G
408088	2408180-001DDUP	SM4500-S2-F
408088	MW-12DDUP	EPA 310.2
408088	MW-12DDUP	SM4500NH3G
408088	MW-12DDUP	SM5310C
408136	2408063-002ADUP	EPA300.0
408136	2408076-001BDUP	EPA 310.2
408136	2408076-001CDUP	SM4500S2D
408136	2408076-001DDUP	SM4500NH3G
408136	2408097-002ADUP	EPA300.0
408136	2408139-002BDUP	SM4500S2D
408136	2408179-002BDUP	SM4500NH3G
408153	2408076-001CDUP	SM4500S2D
408153	2408076-001DDUP	SM4500NH3G
408153	2408076-001DDUP	SM5310C
408153	2408124-009BDUP	EPA 310.2
408153	2408124-009BDUP	EPA300.0
408153	2408124-015BDUP	EPA300.0
408153	2408139-002BDUP	SM4500S2D
408153	2408139-002CDUP	EPA300.0
408153	2408179-002BDUP	SM4500NH3G
408153	2408189-001BDUP	EPA300.0

TABLE 6B
FIELD DUPLICATE SAMPLES
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

Primary Sample ID	Duplicate Sample ID	Method(s)
MW-9D	FD-01	E300, E310.2, NWTPH-DX, NWTPH-GX, RSK175, SM 2540D, SM 4500-NH3G, SM 4500-S2-D, EPA 6020B, EPA 8260D, EPA 8270E

TABLE 7
SYSTEM PERFORMANCE SUMMARY
WHIDBEY MARINE & AUTO SUPPLY
WHIDBEY ISLAND, WASHINGTON

SDG	Method	Sample ID	Lab ID	Analyte	Fraction	Reportable Result	Reported Result	Validated Result	Reason for Qualifier
408153	SW6020B	MW-2S	408153-01	Iron	D	Yes	160 J	160 J	EXE
408153	SW6020B	MW-3S	408153-02	Iron	D	Yes	94 J	94 J	EXE
408136	SW8260D	MW-8S	408136-02	Methylene chloride (Dichloromethane)	N	Yes	5.6 J	5.6 J	EXE
408088	E300	MW-18D	2408076-002B	Nitrate (as N)	N	Yes	16.9	16.9 J	HTQ
408153	E300	MW-2S	2408139-001C	Nitrite (as N)	N	Yes	U	UJ	HTQ
408153	E300	MW-3S	2408139-002C	Nitrite (as N)	N	Yes	U	UJ	HTQ
408136	E300	FD-01	2408117-004A	Sulfate	N	Yes	8.5	8.5 J-	LCS
408088	E300	MW-12D	2408076-001B	Sulfate	N	Yes	U	UJ	LCS
408136	E300	MW-17D	2408117-003A	Sulfate	N	Yes	U	UJ	LCS
408088	E300	MW-18D	2408076-002B	Sulfate	N	Yes	20.6	20.6 J-	LCS
408088	E300	MW-21D	2408076-004B	Sulfate	N	Yes	7.11	7.11 J-	LCS
408088	E300	MW-23D	2408076-003B	Sulfate	N	Yes	U	UJ	LCS
408153	E300	MW-2S	2408139-001C	Nitrite (as N)	N	Yes	U	UJ	LCS
408153	E300	MW-3S	2408139-002C	Nitrite (as N)	N	Yes	U	UJ	LCS
408136	E300	MW-8S	2408117-001A	Sulfate	N	Yes	23.7	23.7 J-	LCS
408136	E300	MW-9D	2408117-002A	Sulfate	N	Yes	8.57	8.57 J-	LCS
408136	SM4500-NH3G	FD-01	2408117-004B	Ammonia	N	Yes	U	UJ	MSD
408088	SM4500-NH3G	MW-12D	2408076-001D	Ammonia	N	Yes	U	UJ	MSD
408136	SM4500-NH3G	MW-17D	2408117-003B	Ammonia	N	Yes	U	UJ	MSD
408088	SM4500-NH3G	MW-18D	2408076-002D	Ammonia	N	Yes	U	UJ	MSD
408088	SM4500-NH3G	MW-21D	2408076-004D	Ammonia	N	Yes	U	UJ	MSD
408088	SM4500-NH3G	MW-23D	2408076-003D	Ammonia	N	Yes	U	UJ	MSD
408153	SM4500-NH3G	MW-2S	2408139-001A	Ammonia	N	Yes	U	UJ	MSD
408153	SM4500-NH3G	MW-3S	2408139-002A	Ammonia	N	Yes	U	UJ	MSD
408136	SM4500-NH3G	MW-8S	2408117-001B	Ammonia	N	Yes	U	UJ	MSD
408136	SM4500-NH3G	MW-9D	2408117-002B	Ammonia	N	Yes	U	UJ	MSD

Notes:

MSD = Matrix spike/matrix spike duplicate percent recoveries or relative percent difference were outside the specified limits.

EXE = Result exceeds the calibration range.

HTQ = Holding time exceedance.

LCS = Laboratory control/laboratory control spike duplicate percent recoveries or relative percent difference were outside the specified limits.

J- = The result is an estimated quantity, but the result may be biased low.

UJ = The compound was not detected. The reported sample quantitation limit is approximate.

J = Estimated concentration.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401419

January 30, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 1/23/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/12/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401419

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401419-001	MW-21D-S2	01/16/2024 10:50 AM	01/23/2024 1:30 PM
2401419-002	MW-21D-S4	01/16/2024 10:30 AM	01/23/2024 1:30 PM
2401419-003	MW-21D-S7	01/16/2024 2:30 PM	01/23/2024 1:30 PM
2401419-004	MW-23D-S2	01/19/2024 3:05 PM	01/23/2024 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401419**
Date: **1/30/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

2/12/24- Revised report includes an updated Sample ID for 2401419-004 per the COC.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401419-001 **Collection Date:** 1/16/2024 10:50:00 AM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 1:05:00 PM

Lab ID: 2401419-002 **Collection Date:** 1/16/2024 10:30:00 AM
Client Sample ID: **MW-21D-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 2:32:00 PM

Lab ID: 2401419-003 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:15:00 PM

Lab ID: 2401419-004 **Collection Date:** 1/19/2024 3:05:00 PM
Client Sample ID: **MW-23D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:32:00 PM

Work Order: 2401419
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42741**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MBLKS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864259**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42741**	SampType: **LCS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **LCSS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864260**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.07	0.150	1.000	0	107	80	120				

Sample ID: **2401419-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864262**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2401419-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864263**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125				

Sample ID: **2401419-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864264**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.04	0.150	1.000	0	104	75	125	1.106	6.63	20	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401419
Logged by:	Clare Griggs	Date Received:	1/23/2024 1:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 401269

PO #: D-641

REMARKS: EIM and EQuIS 4

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Total Organic Carbon	Nitrate	Nitrite	Sulfate	RSK-175						Notes
MW-21D-S2		1/16/2024	1050	soil	1	x										
MW-21D-S4		1/16/2024	1030	soil	1	x										
MW-21D-S7		1/16/2024	1430	soil	1	x										
MW-23D-S2		1/19/2024	1505	soil	1	x										

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	1/23/24	0840
Received by:	Nathan Koppes	F&B	1/23/24	1330
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 2, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 15, 2024 from the Whibdey Marine 0204475-001, F&BI 401180 project. There are 47 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0202R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whibdey Marine 0204475-001, F&BI 401180 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401180 -01	MW-19D-S1
401180 -02	MW-19D-S2
401180 -03	MW-19D-S3
401180 -04	MW-19D-S4
401180 -05	MW-19D-S5
401180 -06	MW-19D-S6
401180 -07	HA-2-S1
401180 -08	MW-20D-S1
401180 -09	MW-20D-S2
401180 -10	MW-20D-S3
401180 -11	MW-20D-S4
401180 -12	MW-20D-S5

Sample MW-19D-S2 was sent to Fremont Analytical for EPH and VPH analyses. The report is enclosed.

Acetone in the 8260D laboratory control sample did not meet the acceptance criteria. The data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for sample MW-19D-S2. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180
Date Extracted: NA
Date Analyzed: 01/15/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-19D-S1 401180-01	9
MW-19D-S2 401180-02	8
MW-19D-S3 401180-03	3
MW-19D-S4 401180-04	5
MW-19D-S5 401180-05	19
MW-19D-S6 401180-06	17
MW-20D-S1 401180-08	5
MW-20D-S2 401180-09	7
MW-20D-S3 401180-10	6
MW-20D-S4 401180-11	3
MW-20D-S5 401180-12	22

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180
Date Extracted: 01/16/24
Date Analyzed: 01/16/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S1 401180-01	<5	112
MW-19D-S2 401180-02	10	99
MW-19D-S3 401180-03	<5	110
MW-19D-S4 401180-04	<5	113
MW-19D-S5 401180-05	<5	111
MW-19D-S6 401180-06	<5	113
MW-20D-S1 401180-08	<5	113
MW-20D-S2 401180-09	<5	112
MW-20D-S3 401180-10	<5	112
MW-20D-S4 401180-11	<5	114

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180
Date Extracted: 01/16/24
Date Analyzed: 01/16/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S5 401180-12	<5	114
Method Blank 04-0019 MB	<5	107

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/15/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S1 401180-01	<50	<250	104
MW-19D-S2 401180-02	370	1,700	107
MW-19D-S3 401180-03	<50	<250	107
MW-19D-S4 401180-04	<50	<250	103
MW-19D-S5 401180-05	<50	<250	104
MW-19D-S6 401180-06	<50	<250	102
MW-20D-S1 401180-08	<50	<250	103
MW-20D-S2 401180-09	<50	<250	102
MW-20D-S3 401180-10	<50	<250	102
MW-20D-S4 401180-11	<50	<250	104
MW-20D-S5 401180-12	<50	<250	101
Method Blank 04-145 MB	<50	<250	104

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S2 401180-02	240	1,100	93
Method Blank 04-145 MB	<50	<250	96

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-01
Date Analyzed:	01/16/24	Data File:	401180-01.228
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.06
Lead	1.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-02
Date Analyzed:	01/16/24	Data File:	401180-02.229
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.19
Lead	2.93

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-03
Date Analyzed:	01/16/24	Data File:	401180-03.241
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.79
Lead	1.41

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-04
Date Analyzed:	01/16/24	Data File:	401180-04.242
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.56
Lead	1.23

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-06
Date Analyzed:	01/16/24	Data File:	401180-06.243
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.40
Lead	2.32

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-08
Date Analyzed:	01/16/24	Data File:	401180-08.247
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.33
Lead	1.17

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-09
Date Analyzed:	01/16/24	Data File:	401180-09.248
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.35
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-10
Date Analyzed:	01/16/24	Data File:	401180-10.249
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.93
Lead	1.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-11
Date Analyzed:	01/16/24	Data File:	401180-11.250
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.73
Lead	1.43

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	I4-34 mb
Date Analyzed:	01/15/24	Data File:	I4-34 mb.145
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-01 1/0.5
Date Analyzed:	01/17/24	Data File:	011707.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-02 1/0.5
Date Analyzed:	01/17/24	Data File:	011708.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	84	120
Toluene-d8	105	73	128
4-Bromofluorobenzene	95	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0047
Hexane	<0.25	o-Xylene	0.0045
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.082
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0020	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.026
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-03 1/0.5
Date Analyzed:	01/17/24	Data File:	011709.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-04 1/0.5
Date Analyzed:	01/17/24	Data File:	011710.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-05 1/0.5
Date Analyzed:	01/17/24	Data File:	011711.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	84	120
Toluene-d8	106	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.001
Toluene	<0.001
Ethylbenzene	<0.001
m,p-Xylene	<0.002
o-Xylene	<0.001

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-06 1/0.5
Date Analyzed:	01/17/24	Data File:	011712.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-08 1/0.5
Date Analyzed:	01/17/24	Data File:	011713.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.013
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-09 1/0.5
Date Analyzed:	01/17/24	Data File:	011714.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.013
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-10 1/0.5
Date Analyzed:	01/17/24	Data File:	011715.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0092
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-11 1/0.5
Date Analyzed:	01/17/24	Data File:	011716.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0046
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-12 1/0.5
Date Analyzed:	01/17/24	Data File:	011717.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.001
Toluene	<0.001
Ethylbenzene	<0.001
m,p-Xylene	<0.002
o-Xylene	<0.001

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	04-0105 mb 1/0.5
Date Analyzed:	01/17/24	Data File:	011706.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-01 1/5
Date Analyzed:	01/16/24	Data File:	011613.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	16	137
2-Fluorobiphenyl	75	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	76	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-02 1/25
Date Analyzed:	01/16/24	Data File:	011624.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74 d	16	137
2-Fluorobiphenyl	85 d	46	122
2,4,6-Tribromophenol	94 d	17	154
Terphenyl-d14	98 d	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	0.10
1-Methylnaphthalene	0.060
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	0.051
Benzo(a)pyrene	<0.05 J
Benzo(b)fluoranthene	<0.05 J
Benzo(k)fluoranthene	<0.05 J
Indeno(1,2,3-cd)pyrene	<0.05 J
Dibenz(a,h)anthracene	<0.05 J
Benzo(g,h,i)perylene	<0.05 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-02 1/250
Date Analyzed:	01/17/24	Data File:	011720.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70 d	16	137
2-Fluorobiphenyl	90 d	46	122
2,4,6-Tribromophenol	200 d	17	154
Terphenyl-d14	85 d	31	167

Compounds:	Concentration mg/kg (ppm)
Benzo(a)pyrene	<0.5
Benzo(b)fluoranthene	<0.5
Benzo(k)fluoranthene	<0.5
Indeno(1,2,3-cd)pyrene	<0.5
Dibenz(a,h)anthracene	<0.5
Benzo(g,h,i)perylene	<0.5

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-03 1/5
Date Analyzed:	01/16/24	Data File:	011614.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-04 1/5
Date Analyzed:	01/16/24	Data File:	011615.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	74	17	154
Terphenyl-d14	79	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-06 1/5
Date Analyzed:	01/16/24	Data File:	011616.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	16	137
2-Fluorobiphenyl	86	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-08 1/5
Date Analyzed:	01/16/24	Data File:	011617.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-09 1/5
Date Analyzed:	01/16/24	Data File:	011618.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	16	137
2-Fluorobiphenyl	75	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	75	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-10 1/5
Date Analyzed:	01/16/24	Data File:	011619.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	16	137
2-Fluorobiphenyl	78	46	122
2,4,6-Tribromophenol	73	17	154
Terphenyl-d14	81	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-11 1/5
Date Analyzed:	01/16/24	Data File:	011620.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	16	137
2-Fluorobiphenyl	70	46	122
2,4,6-Tribromophenol	67	17	154
Terphenyl-d14	77	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whibdey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	04-0147 mb 1/5
Date Analyzed:	01/16/24	Data File:	011612.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	16	137
2-Fluorobiphenyl	95	46	122
2,4,6-Tribromophenol	80	17	154
Terphenyl-d14	90	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 401180-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401171-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	106	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	78-121

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401171-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	130	115	119	63-146	3

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	118	77-123

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401170-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	112	116	75-125	4
Lead	mg/kg (ppm)	50	<5	101	105	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	80-120
Lead	mg/kg (ppm)	50	95	80-120

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401180-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	57	56	10-142	2
Chloromethane	mg/kg (ppm)	2	<0.5	82	81	10-126	1
Vinyl chloride	mg/kg (ppm)	2	<0.05	82	83	10-138	1
Bromomethane	mg/kg (ppm)	2	<0.5	82	83	10-163	1
Chloroethane	mg/kg (ppm)	2	<0.5	82	80	10-176	2
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	82	81	10-176	1
Acetone	mg/kg (ppm)	10	<5	47	50	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	88	86	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	91	90	10-137	1
Methylene chloride	mg/kg (ppm)	2	<0.5	78	74	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	90	92	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	88	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	91	91	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	94	97	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	91	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	90	91	21-145	1
2-Butanone (MEK)	mg/kg (ppm)	10	<1	74	75	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	96	95	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	91	91	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	90	91	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	90	90	9-164	0
Benzene	mg/kg (ppm)	2	<0.03	90	89	29-129	1
Trichloroethene	mg/kg (ppm)	2	<0.02	90	90	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	92	90	30-135	2
Bromodichloromethane	mg/kg (ppm)	2	<0.05	95	95	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	87	91	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	96	92	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	96	96	28-144	0
Toluene	mg/kg (ppm)	2	<0.05	94	96	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	99	98	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	101	101	10-205	0
2-Hexanone	mg/kg (ppm)	10	<0.5	104	105	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	97	99	31-137	2
Tetrachloroethene	mg/kg (ppm)	2	<0.025	95	97	20-133	2
Dibromochloromethane	mg/kg (ppm)	2	<0.05	99	98	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	98	101	28-142	3
Chlorobenzene	mg/kg (ppm)	2	<0.05	97	97	32-129	0
Ethylbenzene	mg/kg (ppm)	2	<0.05	98	97	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	95	98	31-143	3
m,p-Xylene	mg/kg (ppm)	4	<0.1	96	97	34-136	1
o-Xylene	mg/kg (ppm)	2	<0.05	98	98	33-134	0
Styrene	mg/kg (ppm)	2	<0.05	98	98	35-137	0
Isopropylbenzene	mg/kg (ppm)	2	<0.05	96	99	31-142	3
Bromoform	mg/kg (ppm)	2	<0.05	97	100	21-156	3
n-Propylbenzene	mg/kg (ppm)	2	<0.05	105	104	23-146	1
Bromobenzene	mg/kg (ppm)	2	<0.05	107	104	34-130	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	104	18-149	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	107	105	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	107	108	25-144	1
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	101	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	102	102	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	104	102	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	104	102	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	105	106	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	107	107	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	103	101	30-131	2
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	103	103	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	101	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	101	106	11-161	5
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	106	105	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	119	118	10-142	1
Naphthalene	mg/kg (ppm)	2	<0.05	105	103	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	105	105	20-144	0

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	72	10-146
Chloromethane	mg/kg (ppm)	2	91	27-133
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Bromomethane	mg/kg (ppm)	2	86	10-201
Chloroethane	mg/kg (ppm)	2	89	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	90	10-196
Acetone	mg/kg (ppm)	10	51 vo	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	96	47-128
Hexane	mg/kg (ppm)	2	97	43-142
Methylene chloride	mg/kg (ppm)	2	88	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	94	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	94	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	97	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	94	64-135
Chloroform	mg/kg (ppm)	2	94	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	79	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	95	64-136
Carbon tetrachloride	mg/kg (ppm)	2	97	60-139
Benzene	mg/kg (ppm)	2	95	65-136
Trichloroethene	mg/kg (ppm)	2	96	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	93	61-145
Bromodichloromethane	mg/kg (ppm)	2	101	57-126
Dibromomethane	mg/kg (ppm)	2	97	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	99	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	99	65-143
Toluene	mg/kg (ppm)	2	103	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	108	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	108	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	108	67-128
Tetrachloroethene	mg/kg (ppm)	2	104	68-128
Dibromochloromethane	mg/kg (ppm)	2	106	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	108	66-129
Chlorobenzene	mg/kg (ppm)	2	104	67-128
Ethylbenzene	mg/kg (ppm)	2	106	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	104	64-121
m,p-Xylene	mg/kg (ppm)	4	104	68-128
o-Xylene	mg/kg (ppm)	2	104	67-129
Styrene	mg/kg (ppm)	2	107	67-129
Isopropylbenzene	mg/kg (ppm)	2	104	68-128
Bromoform	mg/kg (ppm)	2	112	56-132
n-Propylbenzene	mg/kg (ppm)	2	105	68-129
Bromobenzene	mg/kg (ppm)	2	108	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	107	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	107	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	111	61-137
2-Chlorotoluene	mg/kg (ppm)	2	105	69-128
4-Chlorotoluene	mg/kg (ppm)	2	104	67-127
tert-Butylbenzene	mg/kg (ppm)	2	103	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	110	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	106	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	105	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	111	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	110	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	118	50-153
Naphthalene	mg/kg (ppm)	2	105	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	107	61-126

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whibdey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401180-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	77	75	50-150	3
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	78	76	50-150	3
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	74	72	50-150	3
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	83	82	50-150	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	80	79	50-150	1
Fluorene	mg/kg (ppm)	0.83	<0.01	78	78	50-150	0
Phenanthrene	mg/kg (ppm)	0.83	<0.01	80	81	10-170	1
Anthracene	mg/kg (ppm)	0.83	<0.01	84	82	37-139	2
Fluoranthene	mg/kg (ppm)	0.83	<0.01	90	89	10-203	1
Pyrene	mg/kg (ppm)	0.83	<0.01	83	84	10-208	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	89	88	37-146	1
Chrysene	mg/kg (ppm)	0.83	<0.01	85	84	36-144	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	92	91	40-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	82	83	45-157	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	87	84	50-150	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	101	103	24-145	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	99	101	31-137	2
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	96	97	14-141	1

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	81	59-105
2-Methylnaphthalene	mg/kg (ppm)	0.83	81	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	76	62-108
Acenaphthylene	mg/kg (ppm)	0.83	87	61-111
Acenaphthene	mg/kg (ppm)	0.83	84	61-110
Fluorene	mg/kg (ppm)	0.83	82	62-114
Phenanthrene	mg/kg (ppm)	0.83	86	64-112
Anthracene	mg/kg (ppm)	0.83	88	63-111
Fluoranthene	mg/kg (ppm)	0.83	93	66-115
Pyrene	mg/kg (ppm)	0.83	91	65-112
Benz(a)anthracene	mg/kg (ppm)	0.83	93	64-116
Chrysene	mg/kg (ppm)	0.83	90	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	94	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	86	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	89	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	106	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	104	67-131
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	67-126

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401180

SAMPLE CHAIN OF CUSTODY 01/15/24 N2

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	Dx with Silica Gel PCBs EPA 8082	Pb+As	EDB EDC/MTBE	EPH/VPH (Hold)	BTEX	Notes
MW-19D-S1	01 A-F	1/10/24	0940	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-19D-S2	02		1000			X	X			X	X	A	X	X	X		w/ TPH analyses
MW-19D-S3	03		1110			X	X			X	X		X	X			Hold EPH/VPH
MW-19D-S4	04		1120			X	X			X	X		X	X	O		pending TPH
MW-19D-S5	05		1335			X	X			~~X~~	~~X~~					X	results
MW-19D-S6	06		1630			X	X			X	X		X	X	O		"O" = Hold
HA-2-S1	07	1/9/24	1300												O		
MW-20D-S1	08	1/11/24	1430			X	X			X	X		X	X			
MW-20D-S2	09		1450			X	X			X	X		X	X			
MW-20D-S3	10	1/12/24	1155			X	X			X	X		X	X			

x-EPH and VPH on MW-19D-S2 per HG 01/16/24 ME

A-per HG 01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Takahara	HA	1/15/24	~~0740~~ 1120
Received by:	ANHPHAN	F&B	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401180

SAMPLE CHAIN OF CUSTODY

01/15/24 N2

Page # 2 of 2

Report To H. Good, U. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

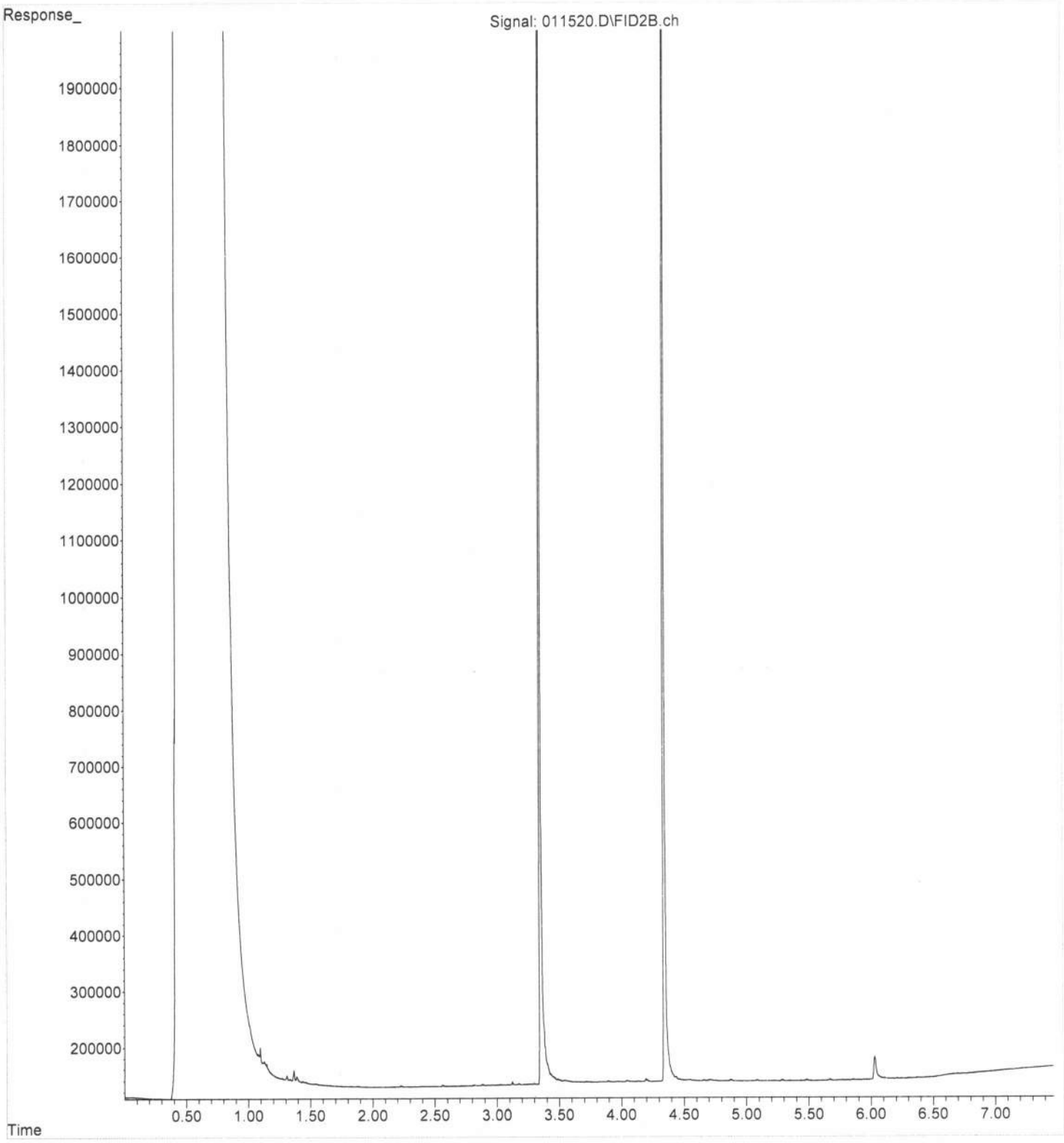
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PL + As	MTBE, EDB, EDC	BTEX		Notes
MW-20P-54	11 A-F	1/15/24	1145	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-20P-55	12 ↓	↓	1415	↓	6	X	X			X	X		X	X	X		w/TPH analysis

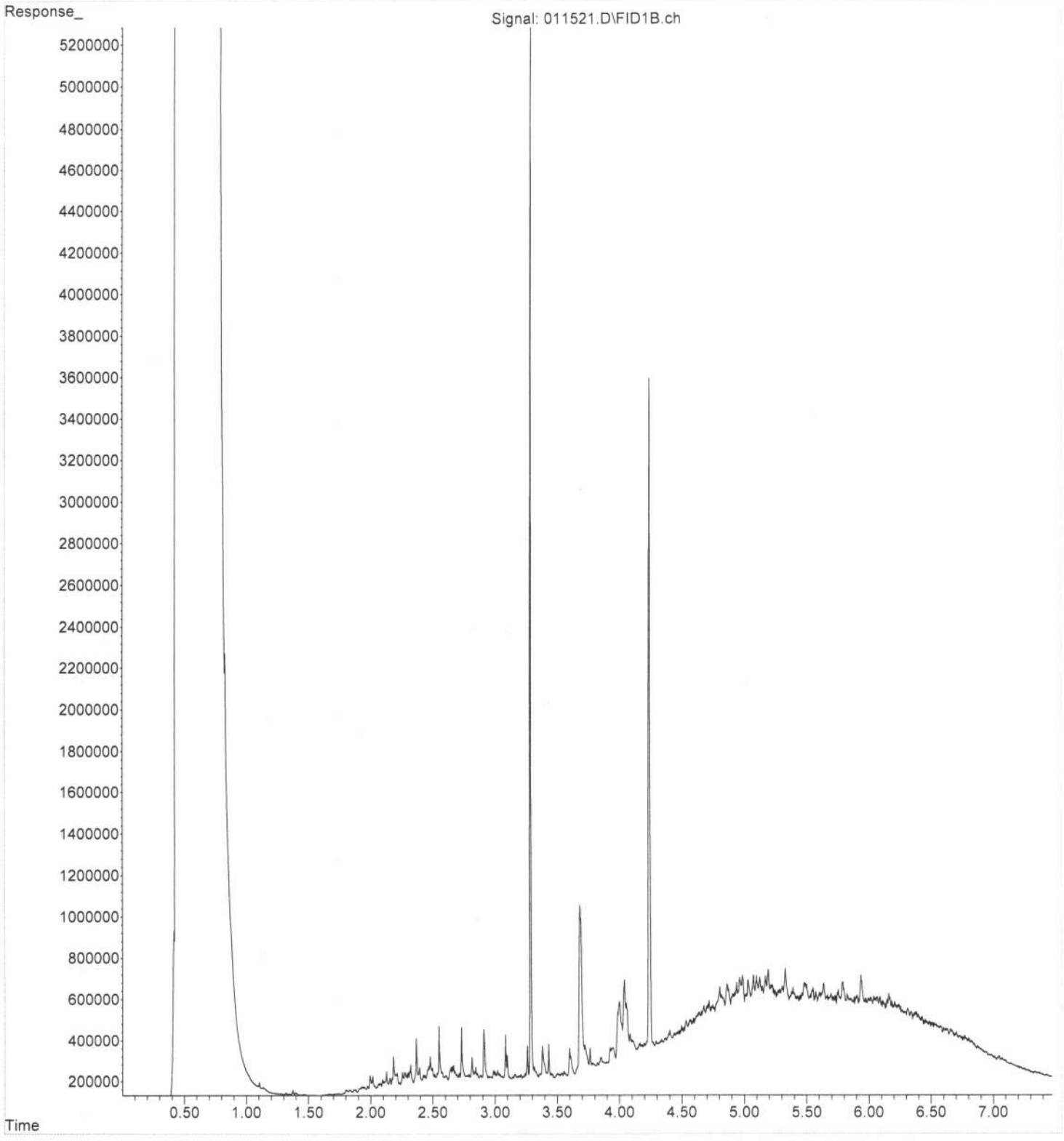
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/15/24	11:20
Received by:	ANHPHAN	FSB	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

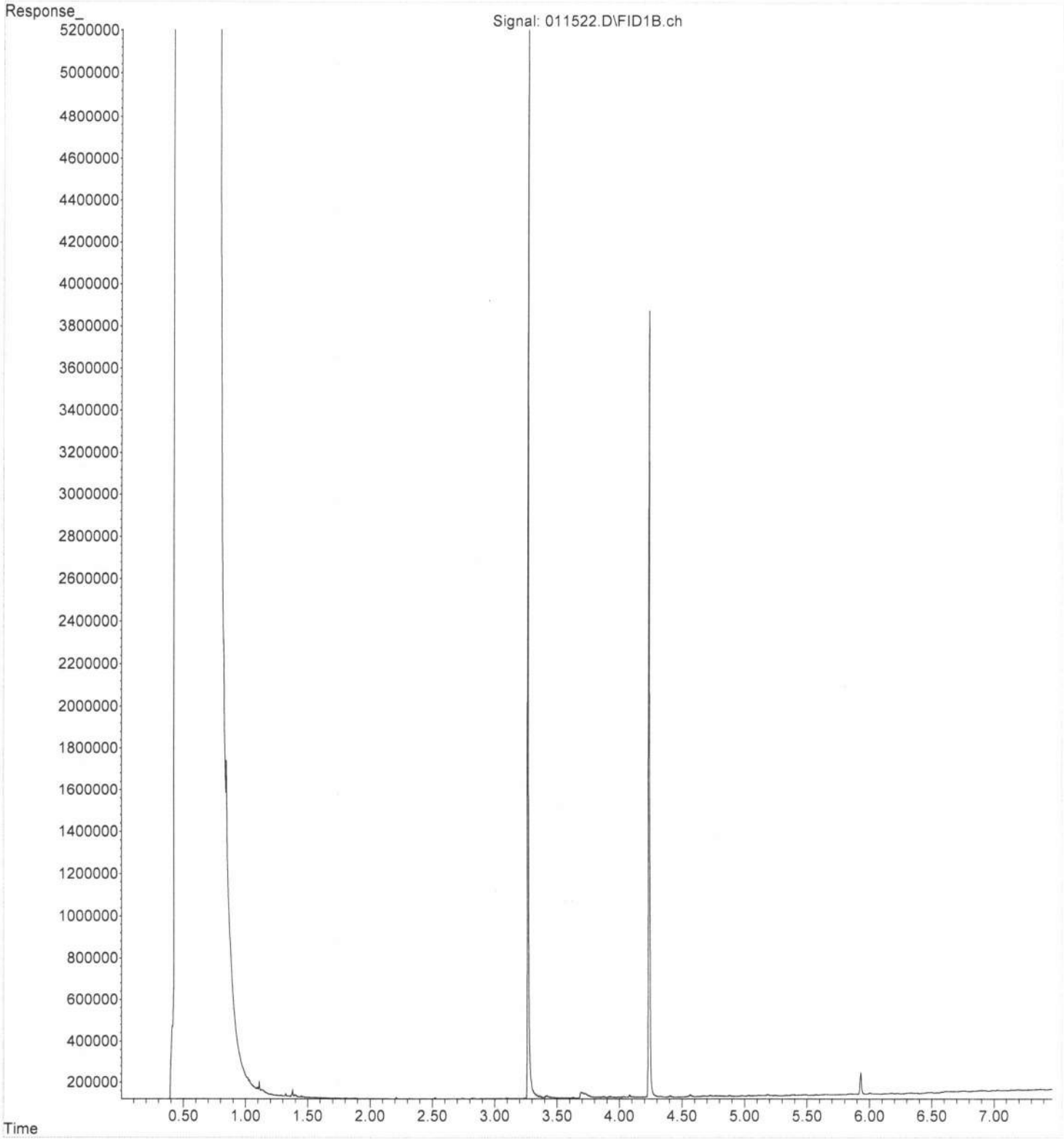
File :P:\Proc_GC13\01-15-24\011520.D
Operator : TL
Acquired : 15 Jan 2024 03:32 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-01
Misc Info : 87 01-16 ERR
Vial Number: 17



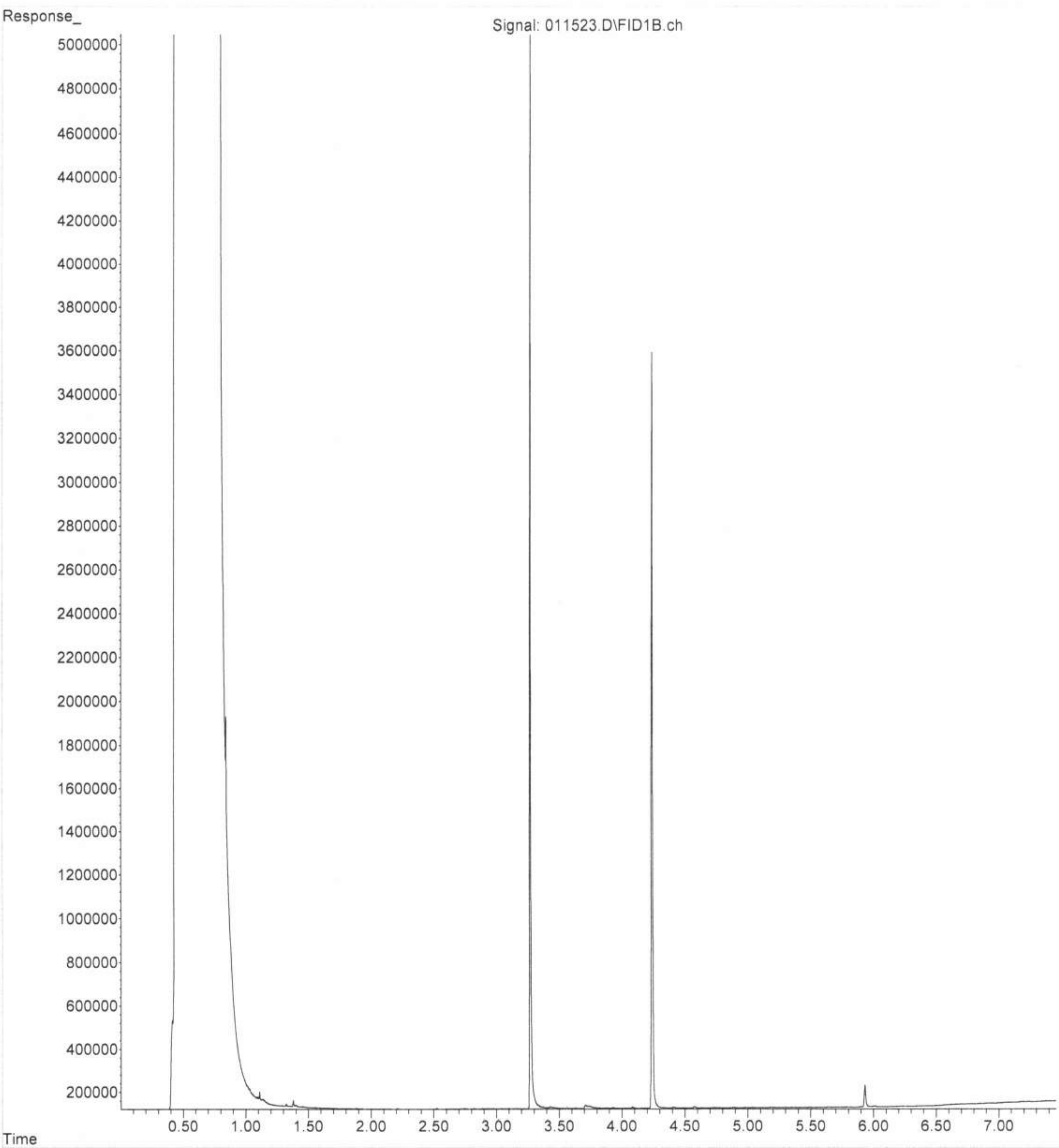
File :P:\Proc_GC13\01-15-24\011521.D
Operator : TL
Acquired : 15 Jan 2024 03:43 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-02
Misc Info : 8301.16 ERR
Vial Number: 18



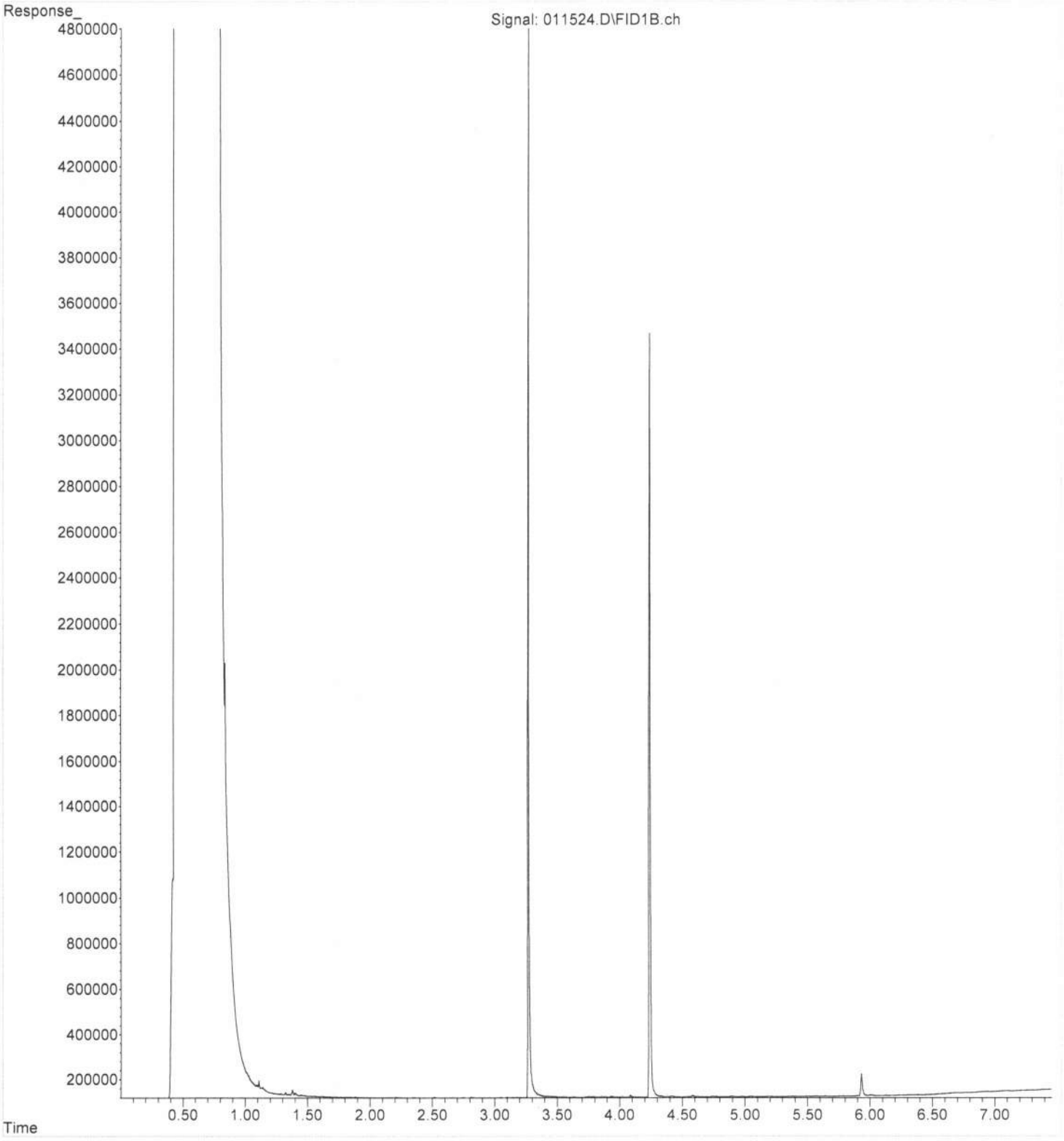
File :P:\Proc_GC13\01-15-24\011522.D
Operator : TL
Acquired : 15 Jan 2024 03:54 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401130-03
Misc Info : 8 Jan 16 ERR
Vial Number: 19



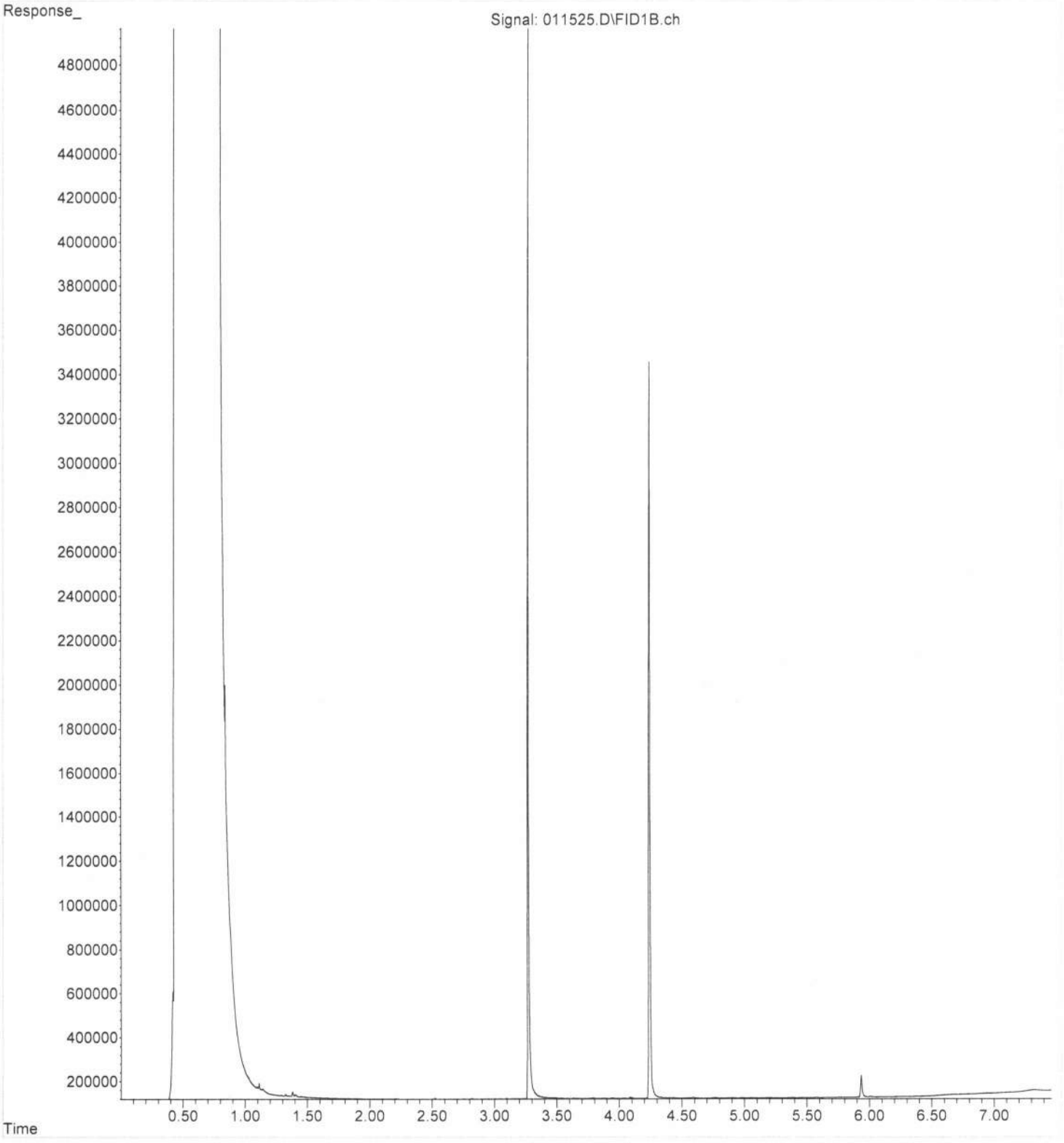
File   :P:\Proc_GC13\01-15-24\011523.D
Operator   : TL
Acquired   : 15 Jan 2024 04:05 pm using AcqMethod Dx.M
Instrument :   GC13
Sample Name: 401150-04
8 [illegible]
Misc Info :
ERR
Vial Number: 20



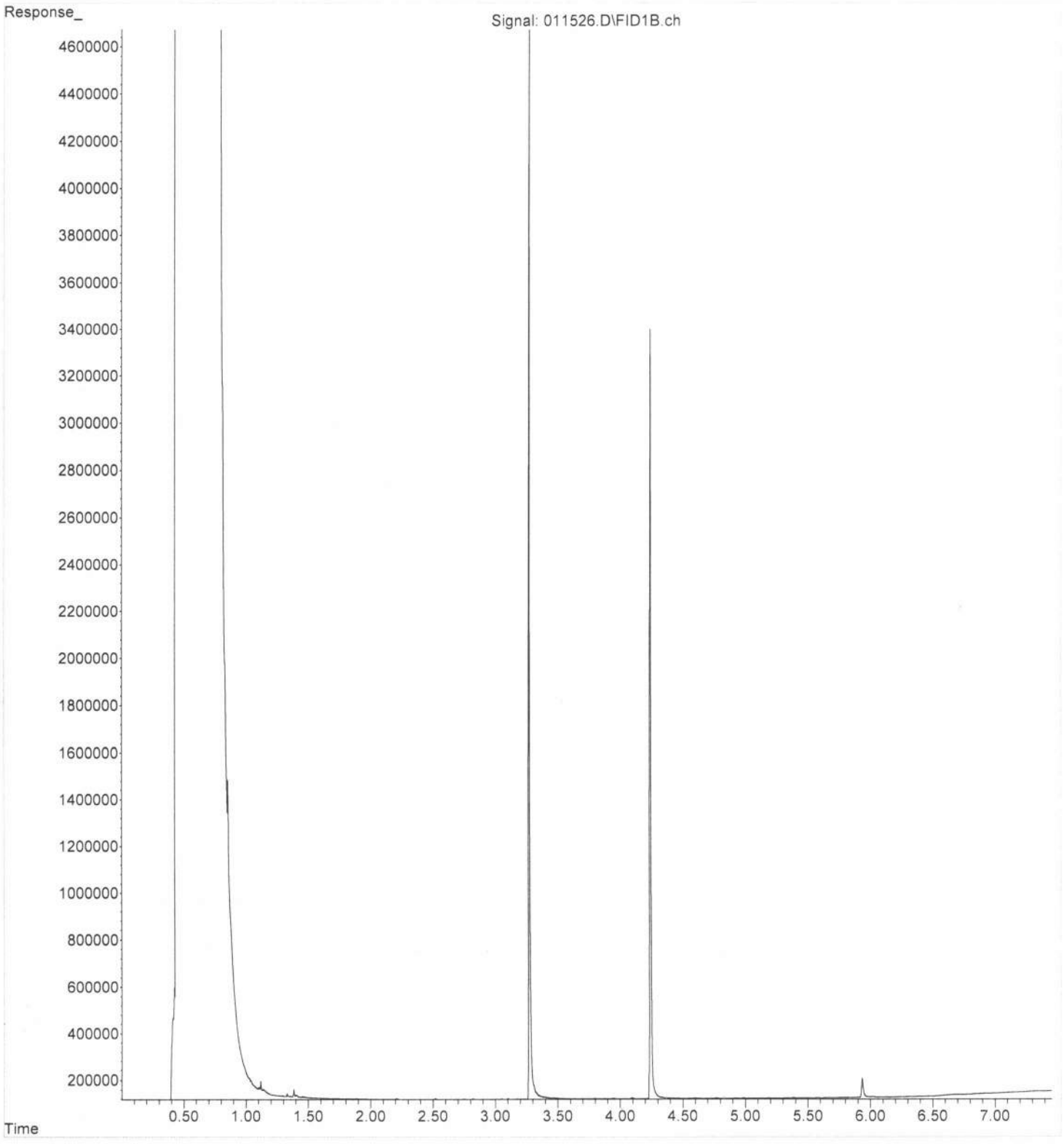
File :P:\Proc_GC13\01-15-24\011524.D
Operator : TL
Acquired : 15 Jan 2024 04:16 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-05
Misc Info : 8 Jan 16 ERR
Vial Number: 21



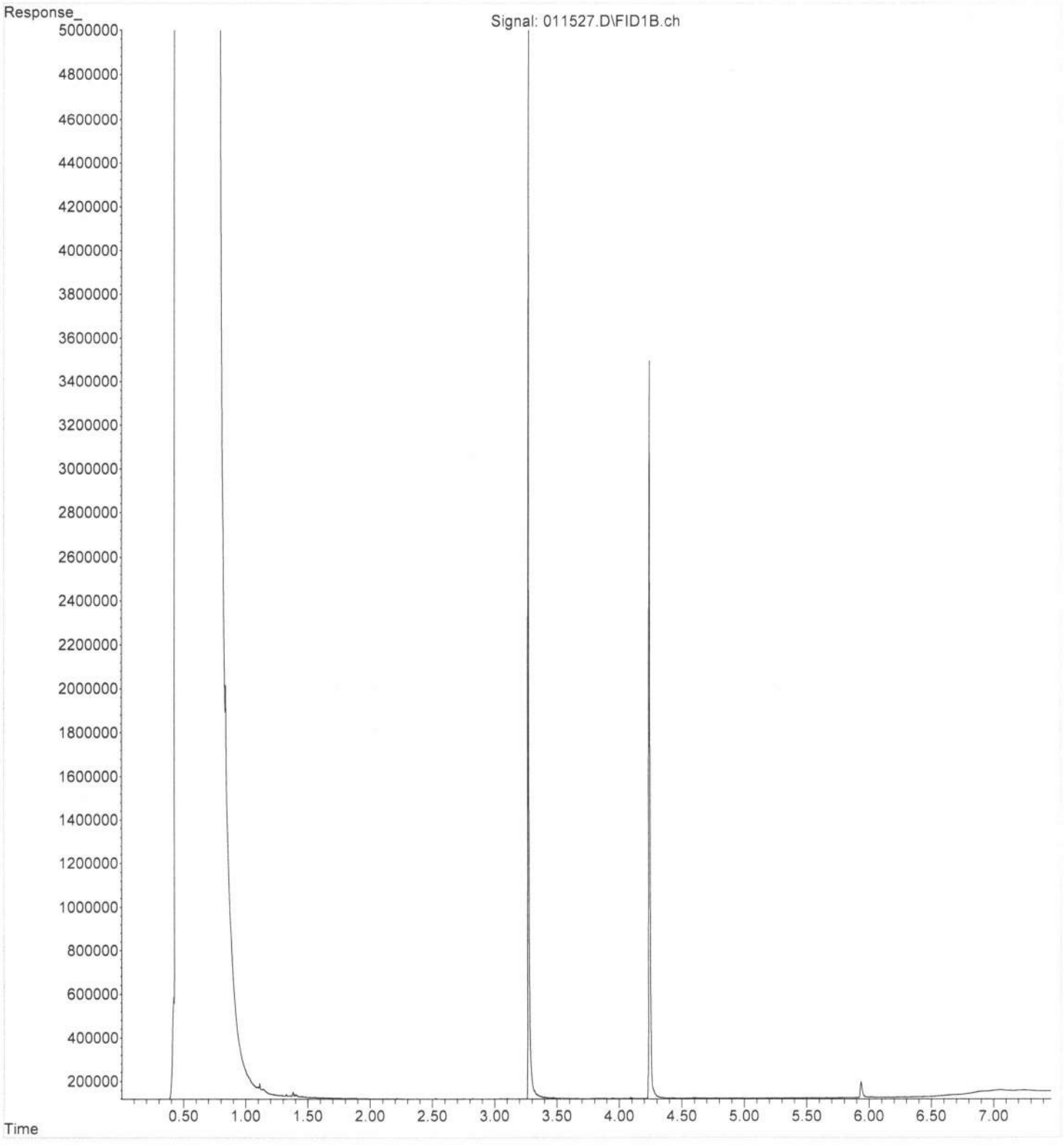
File :P:\Proc_GC13\01-15-24\011525.D
Operator : TL
Acquired : 15 Jan 2024 04:27 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-06
Misc Info : 8 J 01.16 ERR
Vial Number: 22



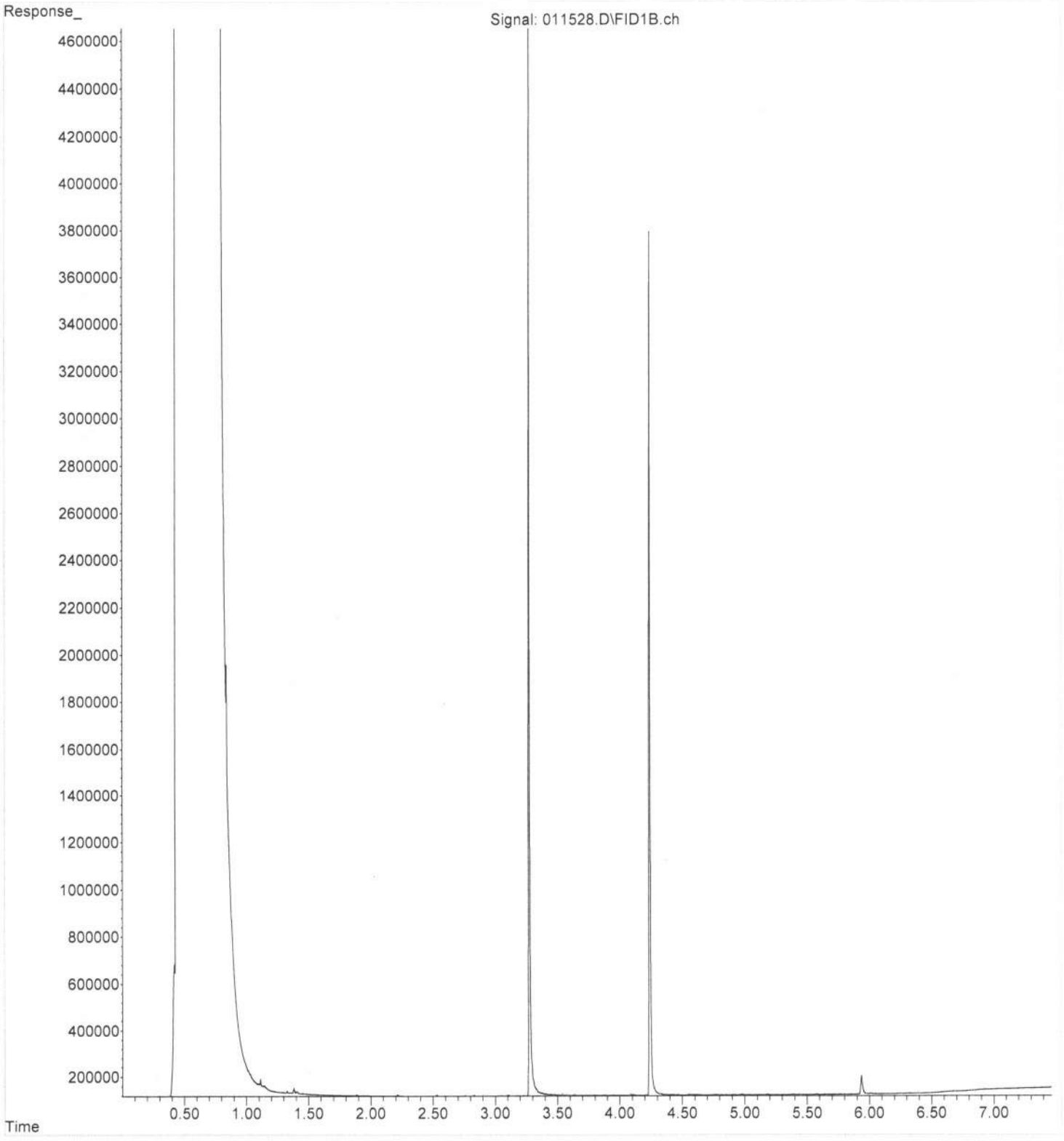
File :P:\Proc_GC13\01-15-24\011526.D
Operator : TL
Acquired : 15 Jan 2024 04:38 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-08
Misc Info : 8 Jan 16 ERR
Vial Number: 23



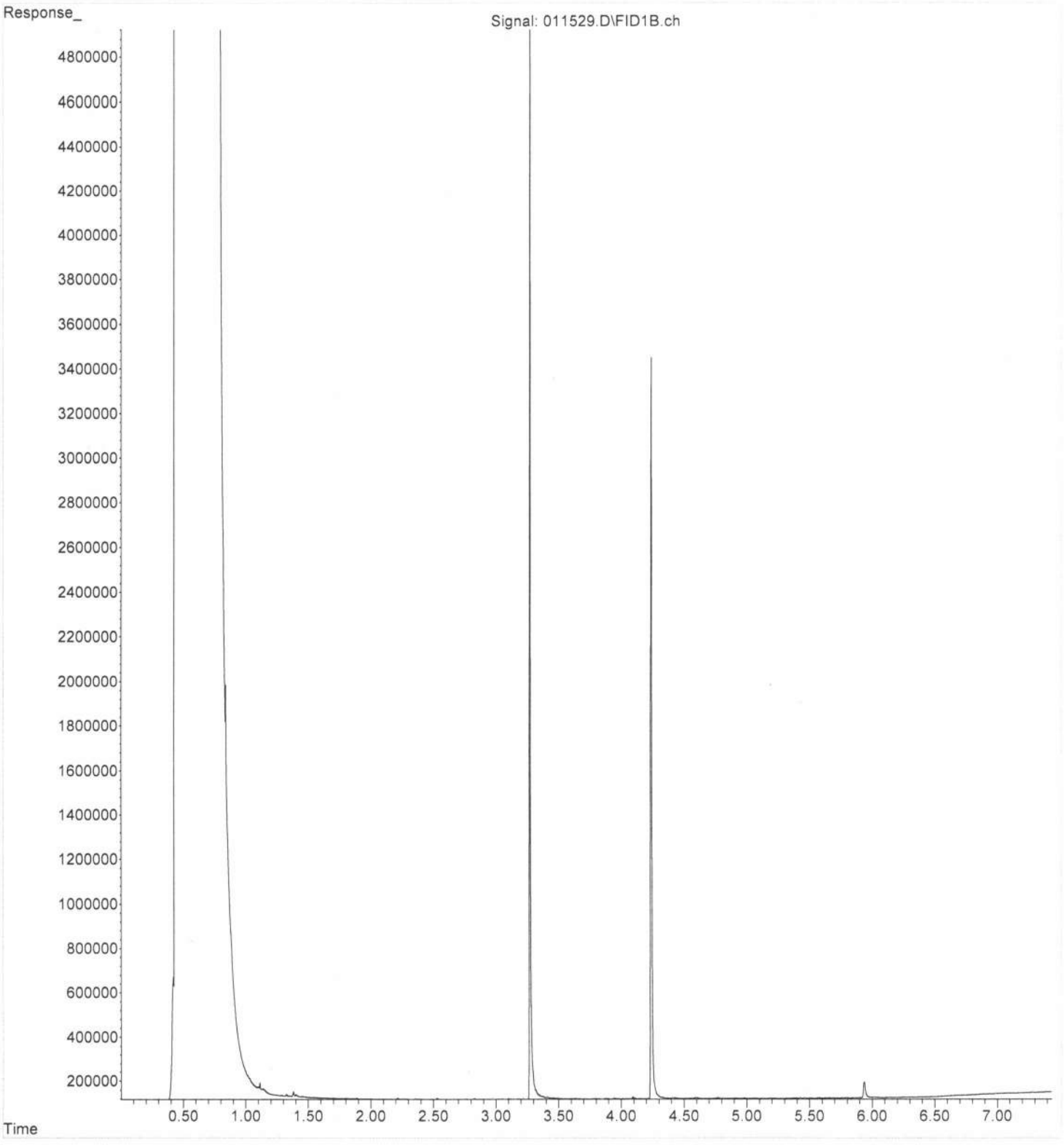
File :P:\Proc_GC13\01-15-24\011527.D
Operator : TL
Acquired : 15 Jan 2024 04:49 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-09
Misc Info : 8 Jan 01-16 ERR
Vial Number: 24



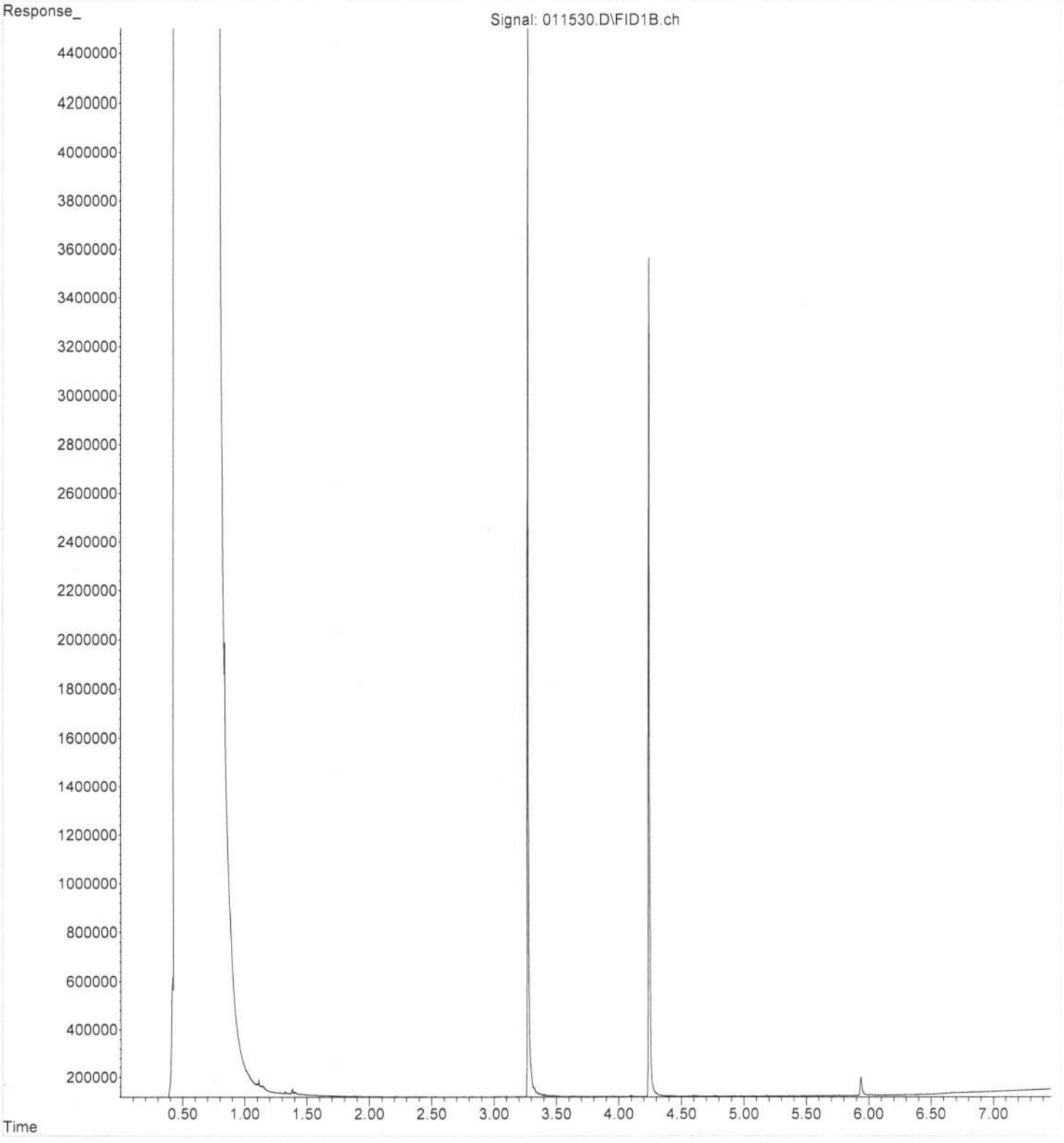
File :P:\Proc_GC13\01-15-24\011528.D
Operator : TL
Acquired : 15 Jan 2024 05:01 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401160-10
Misc Info : 87.01.15 ERR
Vial Number: 25



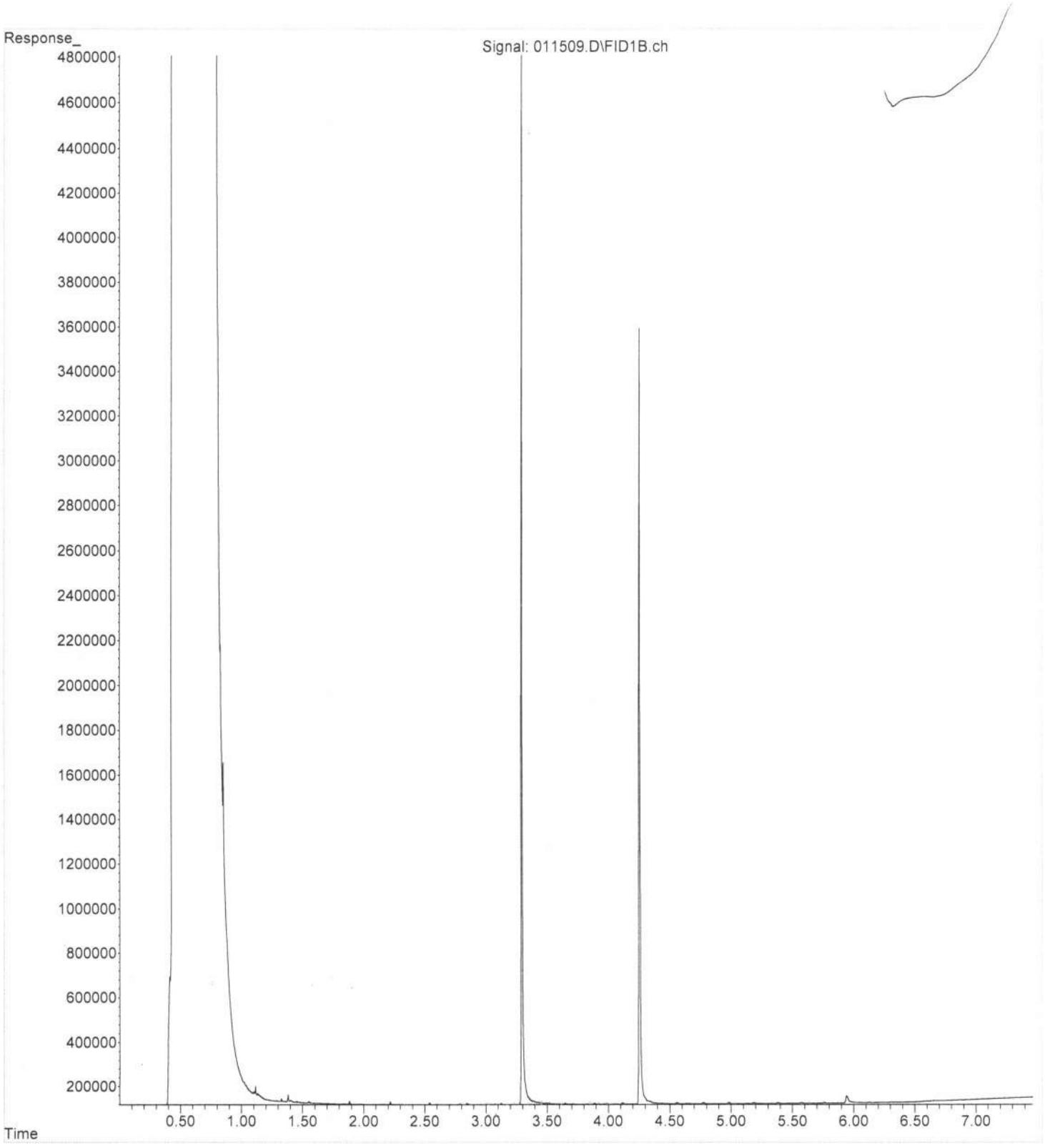
File :P:\Proc_GC13\01-15-24\011529.D
Operator : TL
Acquired : 15 Jan 2024 05:12 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401180-11
Misc Info : 8 Jan 16 ERR
Vial Number: 26



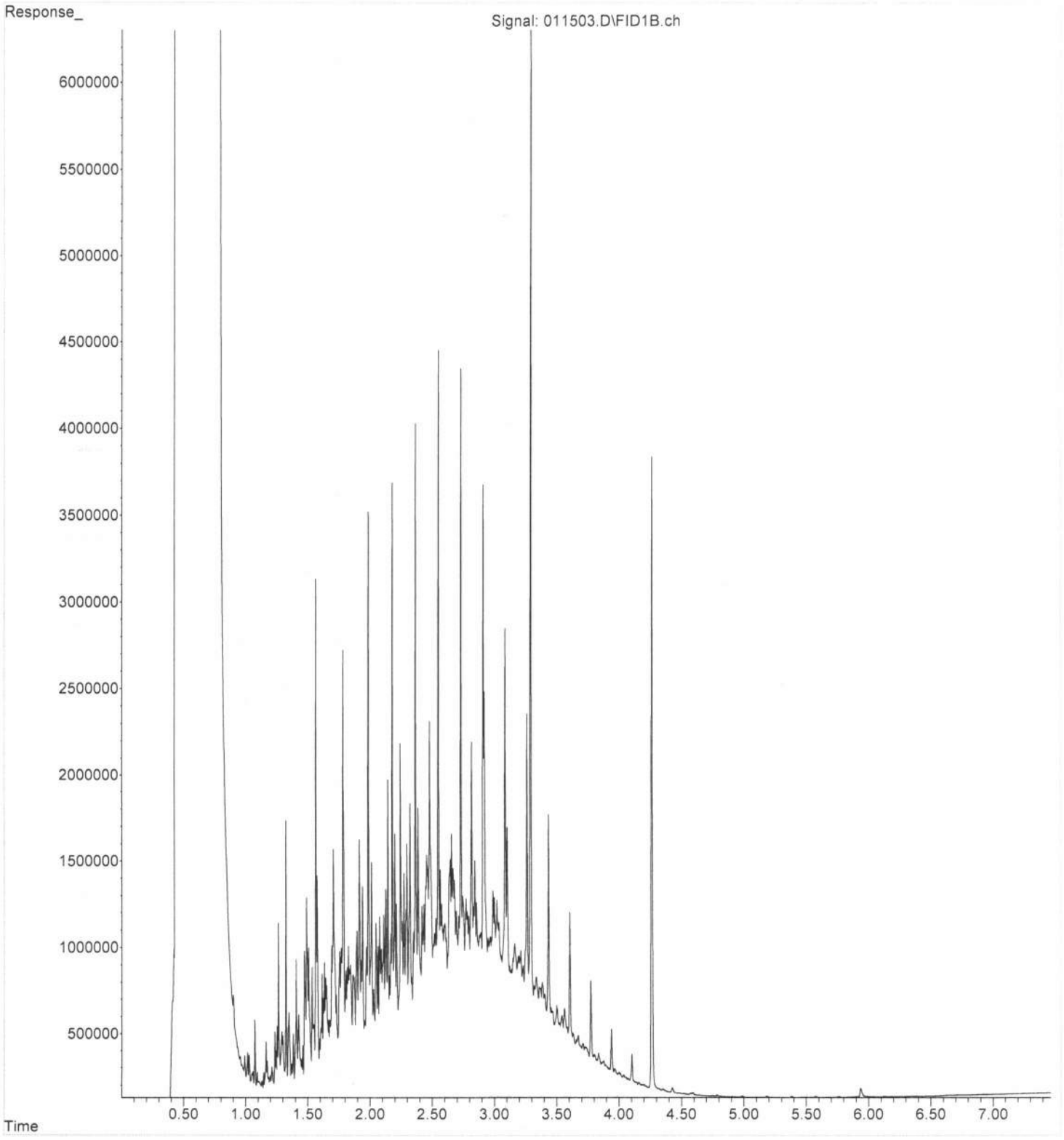
File :P:\Proc_GC13\01-15-24\011530.D
Operator : TL
Acquired : 15 Jan 2024 05:23 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-12
Misc Info : 8 of 16 ERR
Vial Number: 27



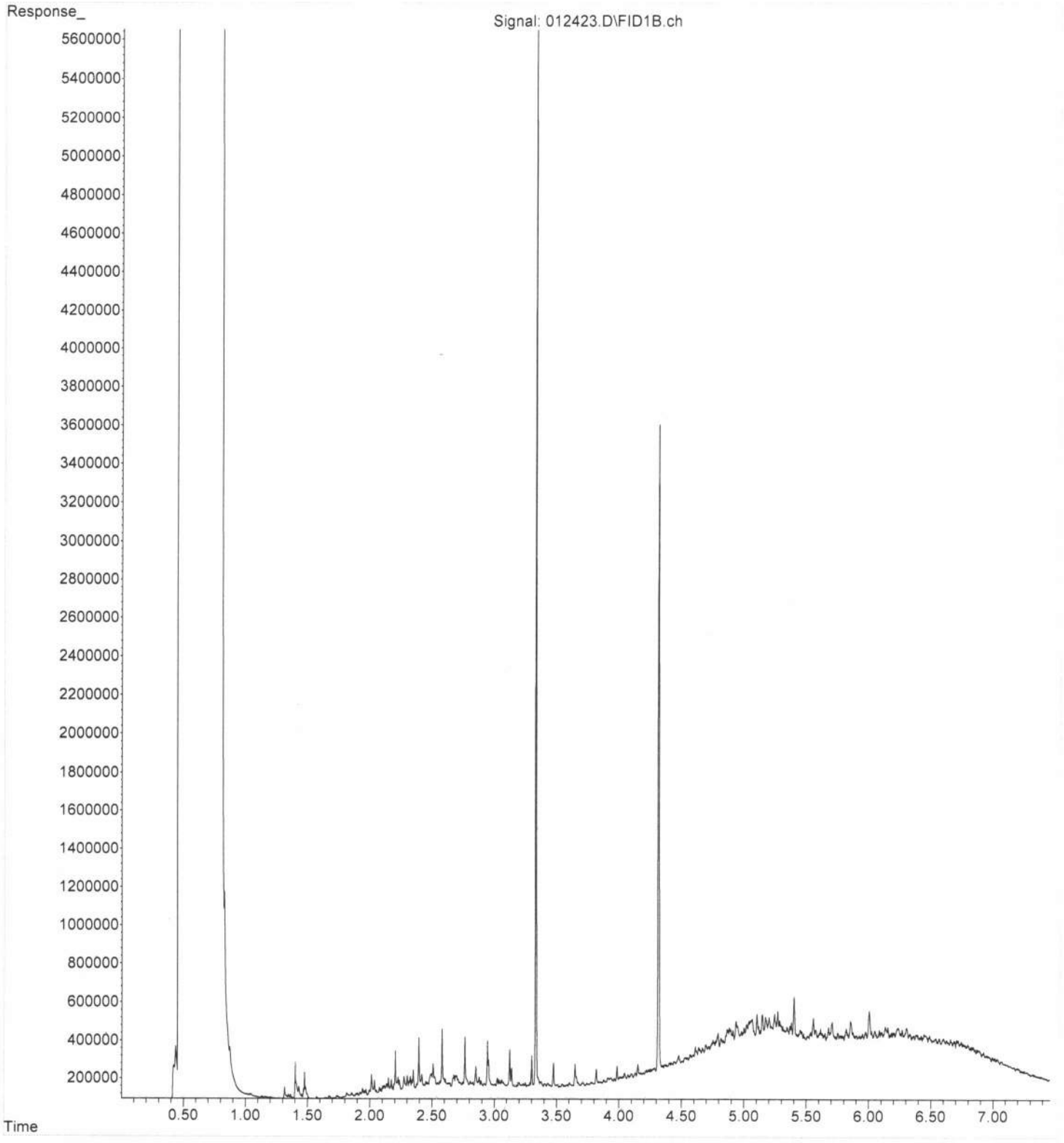
File :P:\Proc_GC13\01-15-24\011509.D
Operator : TL
Acquired : 15 Jan 2024 09:34 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-145 mb
Misc Info : ERR
Vial Number: 11



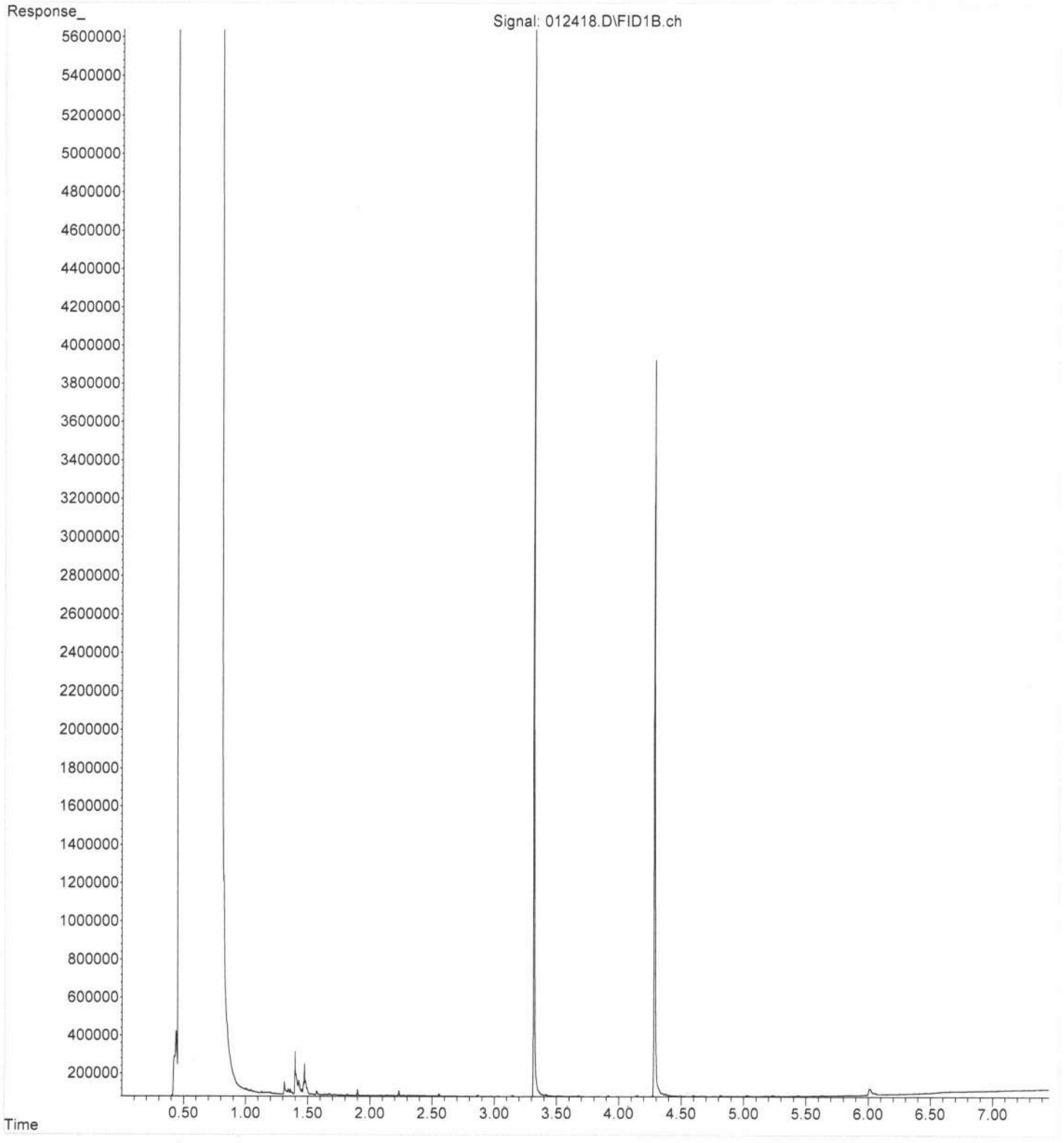
File :P:\Proc_GC13\01-15-24\011503.D
Operator : TL
Acquired : 15 Jan 2024 07:48 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info : ERR
Vial Number: 3



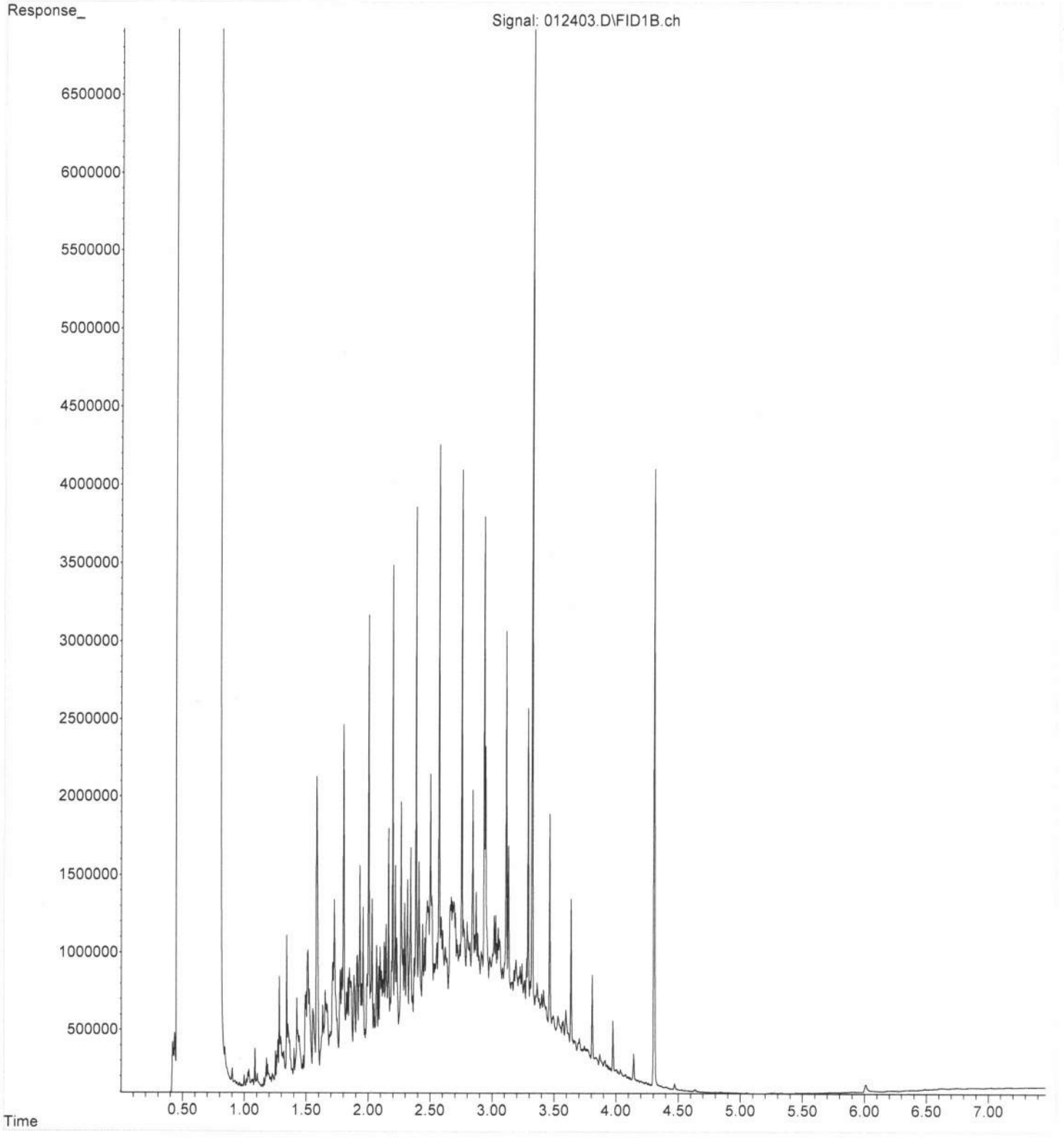
File :P:\Proc_GC10\01-24-24\012423.D
Operator : IJL
Acquired : 24 Jan 2024 03:50 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 401180-02 sg
Misc Info :
Vial Number: 21



File :P:\Proc_GC10\01-24-24\012418.D
Operator : IJL
Acquired : 24 Jan 2024 02:52 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 04-145 mb sg
Misc Info :
Vial Number: 16



File :P:\Proc_GC10\01-24-24\012403.D
Operator : IJL
Acquired : 24 Jan 2024 08:06 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 500 DX 70-26F
Misc Info :
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401180
Work Order Number: 2401315

January 31, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 1/17/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/31/2024*

CLIENT: Friedman & Bruya
Project: 401180
Work Order: 2401315

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401315-001	MW-19D-S2	01/10/2024 10:00 AM	01/17/2024 10:53 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2401315**
Date: **1/31/2024**

CLIENT: Friedman & Bruya
Project: 401180

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2401315**
Date Reported: **1/31/2024**

CLIENT: Friedman & Bruya
Project: 401180

Lab ID: 2401315-001 **Collection Date:** 1/10/2024 10:00:00 AM
Client Sample ID: **MW-19D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42666		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	107	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C10-C12)	ND	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C12-C16)	28.2	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C16-C21)	21.1	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C21-C34)	91.3	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C8-C10)	ND	107	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C10-C12)	ND	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C12-C16)	20.0	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C16-C21)	52.0	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C21-C34)	41.4	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Surr: 1-Chlorooctadecane	50.4	50 - 150	D	%Rec	5	1/23/2024 5:29:47 PM
Surr: o-Terphenyl	67.2	50 - 150	D	%Rec	5	1/23/2024 5:29:47 PM

NOTES:
Diluted due to matrix.

Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42713		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C6-C8)	0.460	0.997	J	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C10-C12)	1.52	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aliphatic Hydrocarbon (C10-C12)	2.13	0.997	Q+	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C8-C10)	0.831	0.997	Q-J	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C8-C10)	0.187	0.997	JH	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C10-C12)	1.29	0.997	Q-	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C10-C12)	1.44	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C12-C13)	1.44	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C12-C13)	1.22	0.997	Q-	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Surr: 2,5-dibromotoluene	83.8	60 - 140	H	%Rec	1	1/26/2024 1:23:00 PM
Surr: 2,5-dibromotoluene	67.3	60 - 140		%Rec	1	1/24/2024 8:00:00 PM

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample Moisture (Percent Moisture)				Batch ID: R89073		Analyst: ZD
Percent Moisture	7.55	0.500		wt%	1	1/18/2024 8:20:25 AM

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42666**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **MBLKS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863392**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	50.9		100.0		50.9	50	150				

Sample ID: **MB-42666**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **MBLKS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863399**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	72.1		100.0		72.1	50	150				

Sample ID: **LCS-42666**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **LCSS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863393**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	107	20.0	250.0	0	42.6	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	67.1	10.0	125.0	0	53.7	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	67.7	10.0	125.0	0	54.2	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	67.4	10.0	125.0	0	53.9	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	83.9	10.0	125.0	0	67.1	36.6	144				
Surr: 1-Chlorooctadecane	55.4		100.0		55.4	50	150				

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42666**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **LCSS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863400**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	140	20.0	250.0	0	56.0	18.6	130				
Aromatic Hydrocarbon (C10-C12)	104	10.0	125.0	0	82.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	100	10.0	125.0	0	80.1	43.6	124				
Aromatic Hydrocarbon (C16-C21)	101	10.0	125.0	0	81.1	49.5	124				
Aromatic Hydrocarbon (C21-C34)	93.6	10.0	125.0	0	74.9	54.8	124				
Surr: o-Terphenyl	74.3		100.0		74.3	50	150				

Sample ID: **2401315-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **MW-19D-S2**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863395**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	113	106	265.4	0	42.6	6.01	130				D
Aliphatic Hydrocarbon (C10-C12)	65.6	53.1	132.7	0	49.4	11.6	127				D
Aliphatic Hydrocarbon (C12-C16)	79.1	53.1	132.7	28.19	38.4	24.7	129				D
Aliphatic Hydrocarbon (C16-C21)	76.0	53.1	132.7	21.13	41.3	25.5	132				D
Aliphatic Hydrocarbon (C21-C34)	138	53.1	132.7	91.32	35.4	21.4	138				D
Surr: 1-Chlorooctadecane	46.4		106.2		43.7	50	150				DS

NOTES:
S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed and recovered within range.
Diluted due to matrix.

Sample ID: **2401315-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **MW-19D-S2**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	139	106	265.4	0	52.5	12.6	130				D
Aromatic Hydrocarbon (C10-C12)	97.9	53.1	132.7	0	73.8	26.3	130				D
Aromatic Hydrocarbon (C12-C16)	109	53.1	132.7	20.01	67.0	23.3	139				D
Aromatic Hydrocarbon (C16-C21)	145	53.1	132.7	52.00	70.1	32.2	131				D
Aromatic Hydrocarbon (C21-C34)	152	53.1	132.7	41.41	83.1	35.8	139				D
Surr: o-Terphenyl	75.7		106.2		71.3	50	150				D

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2401315-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89212**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
Diluted due to matrix.

Sample ID: **2401315-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89211**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863396**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	123	103	256.6	0	47.8	6.01	130	113.1	8.22	30	D
Aliphatic Hydrocarbon (C10-C12)	70.3	51.3	128.3	0	54.8	11.6	127	65.60	6.91	30	D
Aliphatic Hydrocarbon (C12-C16)	87.5	51.3	128.3	28.19	46.2	24.7	129	79.14	10.0	30	D
Aliphatic Hydrocarbon (C16-C21)	93.5	51.3	128.3	21.13	56.4	25.5	132	75.95	20.8	30	D
Aliphatic Hydrocarbon (C21-C34)	164	51.3	128.3	91.32	56.9	21.4	138	138.3	17.2	30	D
Surr: 1-Chlorooctadecane	51.6		102.6		50.2	50	150		0		D

NOTES:
Diluted due to matrix.

Sample ID: **2401315-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89212**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863403**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	145	103	256.6	0	56.4	12.6	130	139.2	3.83	30	D
Aromatic Hydrocarbon (C10-C12)	95.1	51.3	128.3	0	74.1	26.3	130	97.87	2.89	30	D
Aromatic Hydrocarbon (C12-C16)	99.1	51.3	128.3	20.01	61.6	23.3	139	109.0	9.50	30	D
Aromatic Hydrocarbon (C16-C21)	121	51.3	128.3	52.00	54.0	32.2	131	145.0	17.8	30	D
Aromatic Hydrocarbon (C21-C34)	182	51.3	128.3	41.41	109	35.8	139	151.6	18.1	30	D
Surr: o-Terphenyl	68.1		102.6		66.4	50	150		0		D

NOTES:
Diluted due to matrix.

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865040**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	20.5	2.50	20.00	0	103	70	130				
Aliphatic Hydrocarbon (C6-C8)	12.9	2.50	10.00	0	129	70	130				
Aliphatic Hydrocarbon (C8-C10)	20.3	2.50	10.00	0	203	70	130				S
Aliphatic Hydrocarbon (C10-C12)	13.1	2.50	10.00	0	131	70	130				S
Aromatic Hydrocarbon (C8-C10)	34.9	2.50	50.00	0	69.7	70	130				S
Aromatic Hydrocarbon (C10-C12)	6.27	2.50	10.00	0	62.7	70	130				S
Aromatic Hydrocarbon (C12-C13)	6.22	2.50	10.00	0	62.2	70	130				S
Surr: 2,5-dibromotoluene	2.02		2.500		81.0	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	0.989	2.50		0	0						J
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	1.30	2.50		0	0						J
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.75		2.500		70.0	60	140				

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MW-19D-S2**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		0	0			0	0	25	
Aliphatic Hydrocarbon (C6-C8)	ND	0.997		0	0			0.4596	200	25	
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		0	0			0	0	25	
Aliphatic Hydrocarbon (C10-C12)	2.21	0.997		0	0			2.132	3.80	25	Q+
Aromatic Hydrocarbon (C8-C10)	1.16	0.997		0	0			0.8308	32.7	25	BQ-

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MW-19D-S2**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	1.17	0.997		0	0			1.288	9.87	25	Q-
Aromatic Hydrocarbon (C12-C13)	1.35	0.997		0	0			1.219	10.2	25	Q-
Surr: 2,5-dibromotoluene	0.657		0.9971		65.9	60	140		0	0	

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/25/2024**	SeqNo: **1865012**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	17.9	2.50	20.00	0	89.3	70	130				
Aliphatic Hydrocarbon (C6-C8)	11.2	2.50	10.00	0	112	70	130				
Aliphatic Hydrocarbon (C8-C10)	12.0	2.50	10.00	0	120	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.7	2.50	10.00	0	107	70	130				
Aromatic Hydrocarbon (C8-C10)	52.3	2.50	50.00	0	105	70	130				
Aromatic Hydrocarbon (C10-C12)	10.3	2.50	10.00	0	103	70	130				
Aromatic Hydrocarbon (C12-C13)	10.2	2.50	10.00	0	102	70	130				
Surr: 2,5-dibromotoluene	2.60		2.500		104	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/26/2024**	SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.83		2.500		73.3	60	140				

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-42713** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89309**
Client ID: **MBLKS** Batch ID: **42713** Analysis Date: **1/26/2024** SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2401469-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/24/2024** RunNo: **89309**
Client ID: **BATCH** Batch ID: **42713** Analysis Date: **1/26/2024** SeqNo: **1864986**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		0	0			0.4976	200	25	
Aliphatic Hydrocarbon (C6-C8)	24.9	1.40		0	0			22.74	9.25	25	
Aliphatic Hydrocarbon (C8-C10)	33.5	1.40		0	0			33.57	0.230	25	
Aromatic Hydrocarbon (C8-C10)	44.7	1.40		0	0			44.93	0.405	25	
Aromatic Hydrocarbon (C12-C13)	19.2	1.40		0	0			18.77	2.48	25	
Surr: 2,5-dibromotoluene	1.49		1.401		106	60	140		0	0	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401315
Logged by:	Clare Griggs	Date Received:	1/17/2024 10:53:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ MeOH
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401315

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
401180	D-631

REMARKS: EIM and EQuIS

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
MW-19D-S2		1/10/2024	1000	soil	2 + ac	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/17/24	0800
Received by:		Nathan Koffler	FAI	1/17/24	1053
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 8, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on January 15, 2024 from the Whidbey Marine 024475-001, F&BI 401180 project. The sample IDs have been amended.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0207R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 7, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the additional results from the testing of material submitted on January 15, 2024 from the Whidbey Marine 024475-001, F&BI 401180 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0207R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 024475-001, F&BI 401180 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401180 -01	MW-19D-S1
401180 -02	MW-19D-S2
401180 -03	MW-19D-S3
401180 -04	MW-19D-S4
401180 -05	MW-19D-S5
401180 -06	MW-19D-S6
401180 -07	HA-2-51
401180 -08	MW-20D-S1
401180 -09	MW-20D-S2
401180 -10	MW-20D-S3
401180 -11	MW-20D-S4
401180 -12	MW-20D-S5

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 024475-001
Date Extracted:	01/17/24	Lab ID:	401180-12 1/0.5
Date Analyzed:	01/17/24	Data File:	011717.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 024475-001
Date Extracted:	01/17/24	Lab ID:	04-0105 mb 1/0.5
Date Analyzed:	01/17/24	Data File:	011706.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Date of Report: 02/07/24
Date Received: 01/15/24
Project: Whidbey Marine 024475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401180-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2	<0.05	82	83	10-138	1
Chloroethane	mg/kg (ppm)	2	<0.5	82	80	10-176	2
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	88	86	10-160	2
Methylene chloride	mg/kg (ppm)	2	<0.5	78	74	10-156	5
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	88	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	91	91	19-140	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	91	25-135	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	96	95	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	91	91	10-156	0
Trichloroethene	mg/kg (ppm)	2	<0.02	90	90	21-139	0
Tetrachloroethene	mg/kg (ppm)	2	<0.025	95	97	20-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Chloroethane	mg/kg (ppm)	2	89	10-163
1,1-Dichloroethene	mg/kg (ppm)	2	96	47-128
Methylene chloride	mg/kg (ppm)	2	88	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	94	64-135
cis-1,2-Dichloroethene	mg/kg (ppm)	2	94	64-135
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
Trichloroethene	mg/kg (ppm)	2	96	63-139
Tetrachloroethene	mg/kg (ppm)	2	104	68-128

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401180

SAMPLE CHAIN OF CUSTODY 01/15/24 N2

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	Dx with Silica Gel PCBs EPA 8082	Pb+As	EDB EDC/MTBE	EPH/VPH (Hold)	BTEX	Notes
MW-19D-S1	01 A-F	1/10/24	0940	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-19D-S2	02		1000			X	X			X	X	A	X	X	X		w/ TPH analyses
MW-19D-S3	03		1110			X	X			X	X		X	X			Hold EPH/VPH
MW-19D-S4	04		1120			X	X			X	X		X	X	O		pending TPH
MW-19D-S5	05		1335			X	X			~~X~~	~~X~~					X	results
MW-19D-S6	06		1630			X	X			X	X		X	X	O		"O" = Hold
HA-2-S1	07	1/9/24	1300												O		
MW-20D-S1	08	1/11/24	1430			X	X			X	X		X	X			
MW-20D-S2	09		1450			X	X			X	X		X	X			
MW-20D-S3	10	1/12/24	1155			X	X			X	X		X	X			

x-EPH and VPH on MW-19D-S2 per HG 01/16/24 ME

A-per HG 01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Takahara	HA	1/15/24	~~0740~~ 1120
Received by:	ANHPHAN	F&B	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401180

SAMPLE CHAIN OF CUSTODY

01/15/24 N2

Page # 2 of 2

Report To H. Good, U. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PL + As, Fe, Mn	MTBE, EDB,	BTEX	cVOCs	A-per HG 02/02/24 ME Notes
MW-20P-54	11 A-F	1/15/24	1145	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-20P-55	12 ↓	↓	1415	↓	6	X	X			X	X		X	X	X	A	w/TPH analysis

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/15/24	~~11~~ 20
Received by:	ANHPHAN	FSB	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 9, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 22, 2024 from the Whidbey Marine 0204475-001, F&BI 401269 project. There are 72 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 22, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 401269 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401269 -01	MW-20D-S6
401269 -02	MW-21D-S1
401269 -03	MW-21D-S2
401269 -04	MW-21D-S3
401269 -05	MW-21D-S4
401269 -06	MW-21D-S5
401269 -07	MW-21D-S6
401269 -08	MW-21D-S7
401269 -09	MW-22D-S1
401269 -10	MW-22D-S2
401269 -11	MW-22D-S3
401269 -12	MW-22D-S4
401269 -13	MW-22D-S5
401269 -14	MW-22D-S6
401269 -15	MW-22D-S7
401269 -16	MW-22D-S8
401269 -17	MW-23D-S1
401269 -18	MW-23D-S2
401269 -19	MW-22D-Grab

Samples MW-21D-S2, MW-21D-S4, MW-21D-S7, and MW-23D-S2 were sent to Fremont Analytical for total organic carbon analysis. In addition, sample MW-21D-S7 was sent to Fremont for EPH and VPH analyses. The reports are enclosed.

The 8260D dichlorodifluoromethane calibration standard did not meet the acceptance criteria for several compounds. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: NA
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-20D-S6 401269-01	6
MW-21D-S1 401269-02	12
MW-21D-S2 401269-03	9
MW-21D-S3 401269-04	11
MW-21D-S4 401269-05	11
MW-21D-S5 401269-06	8
MW-21D-S6 401269-07	4
MW-21D-S7 401269-08	17
MW-22D-S1 401269-09	3
MW-22D-S2 401269-10	9
MW-22D-S4 401269-12	14

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: NA
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-22D-S5 401269-13	21
MW-22D-S8 401269-16	17
MW-23D-S1 401269-17	4
MW-23D-S2 401269-18	5

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S6 401269-01	<5	118
MW-21D-S1 401269-02	<5	115
MW-21D-S2 401269-03	<5	109
MW-21D-S3 401269-04	<5	117
MW-21D-S4 401269-05	<5	117
MW-21D-S5 401269-06	<5	119
MW-21D-S7 401269-08 1/20	1,200	ip
MW-22D-S1 401269-09	<5	125
MW-22D-S2 401269-10	<5	114
MW-22D-S4 401269-12	<5	117
MW-22D-S5 401269-13	<5	120

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D-S8 401269-16	14	121
MW-23D-S1 401269-17	<5	125
MW-23D-S2 401269-18	<5	117
Method Blank 04-0026 MB2	<5	122
Method Blank 04-0028 MB	<5	116

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-21D-S6 401269-07	<0.02	<0.02	<0.02	<0.06	<5	93
Method Blank 04-0026 MB2	<0.02	<0.02	<0.02	<0.06	<5	103

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/24/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D-Grab 401269-19	<1	6.1	<1	<3	<100	74
Method Blank 04-0027 MB	<1	<1	<1	<3	<100	70

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S6 401269-01	<50	<250	107
MW-21D-S1 401269-02	<50	<250	107
MW-21D-S2 401269-03	<50	<250	105
MW-21D-S3 401269-04	<50	<250	102
MW-21D-S4 401269-05	<50	<250	104
MW-21D-S5 401269-06	<50	<250	107
MW-21D-S6 401269-07	<50	<250	107
MW-21D-S7 401269-08	990 x	<250	117
MW-22D-S1 401269-09	<50	<250	110
MW-22D-S2 401269-10	<50	<250	105
MW-22D-S4 401269-12	<50	<250	108

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-22D-S5 401269-13	<50	<250	108
MW-22D-S8 401269-16	<50	<250	109
MW-23D-S1 401269-17	<50	<250	108
MW-23D-S2 401269-18	<50	<250	111
Method Blank 04-174 MB	<50	<250	108

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/24/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-22D-Grab 401269-19	250 x	<250	83
Method Blank 04-175 MB	<50	<250	92

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-01
Date Analyzed:	01/23/24	Data File:	401269-01.146
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.02
Lead	2.07

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-02
Date Analyzed:	01/23/24	Data File:	401269-02.182
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.54
Lead	1.33

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-03
Date Analyzed:	01/23/24	Data File:	401269-03.183
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.34

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-04
Date Analyzed:	01/23/24	Data File:	401269-04.184
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.61
Lead	2.05

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-05
Date Analyzed:	01/23/24	Data File:	401269-05.185
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.27

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-06
Date Analyzed:	01/23/24	Data File:	401269-06.186
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.99
Lead	1.58

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08
Date Analyzed:	01/23/24	Data File:	401269-08.187
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.89
Lead	5.75

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-09
Date Analyzed:	01/23/24	Data File:	401269-09.203
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.63
Lead	1.15

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-10
Date Analyzed:	01/23/24	Data File:	401269-10.204
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.84
Lead	1.51

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-12
Date Analyzed:	01/23/24	Data File:	401269-12.205
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.03
Lead	2.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-13
Date Analyzed:	01/23/24	Data File:	401269-13.206
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.55
Lead	4.60

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-16
Date Analyzed:	01/23/24	Data File:	401269-16.207
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.91
Lead	1.60

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-17
Date Analyzed:	01/23/24	Data File:	401269-17.208
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.42
Lead	1.18

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-18
Date Analyzed:	01/24/24	Data File:	401269-18.209
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.58
Lead	1.31

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	I4-56 mb
Date Analyzed:	01/23/24	Data File:	I4-56 mb.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-01 1/0.5
Date Analyzed:	01/23/24	Data File:	012311.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	99	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-02 1/0.5
Date Analyzed:	01/23/24	Data File:	012312.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.015
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-03 1/0.5
Date Analyzed:	01/23/24	Data File:	012313.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0092
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-04 1/0.5
Date Analyzed:	01/23/24	Data File:	012314.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.019
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-05 1/0.5
Date Analyzed:	01/23/24	Data File:	012315.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.042
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-06 1/0.5
Date Analyzed:	01/23/24	Data File:	012316.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.022
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08 1/0.5
Date Analyzed:	01/23/24	Data File:	012317.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	84	120
Toluene-d8	119	73	128
4-Bromofluorobenzene	120	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.27
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	1.3
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	5.8
Hexane	1.7	o-Xylene	1.8
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	0.55
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	2.7
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	8.5 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	19 ve
Benzene	<0.001	sec-Butylbenzene	0.39
Trichloroethene	<0.002	p-Isopropyltoluene	0.34
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.003	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.5
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08 1/5
Date Analyzed:	01/24/24	Data File:	012430.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	84	120
Toluene-d8	108	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)
1,3,5-Trimethylbenzene	9.0
1,2,4-Trimethylbenzene	23

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-09 1/0.5
Date Analyzed:	01/24/24	Data File:	012415.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.018
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5 k	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5 ca
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-10 1/0.5
Date Analyzed:	01/23/24	Data File:	012319.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.011
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-12 1/0.5
Date Analyzed:	01/23/24	Data File:	012320.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0024
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-13 1/0.5
Date Analyzed:	01/23/24	Data File:	012321.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-16 1/0.5
Date Analyzed:	01/23/24	Data File:	012322.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	84	120
Toluene-d8	106	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.69
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	2.4
Hexane	<0.25	o-Xylene	0.81
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.061
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.13
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.42
Benzene	0.0040	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.13	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.22
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-17 1/0.5
Date Analyzed:	01/24/24	Data File:	012414.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0048
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5 k	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5 ca
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-18 1/0.5
Date Analyzed:	01/23/24	Data File:	012324.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0036
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	04-0117 mb 1/0.5
Date Analyzed:	01/23/24	Data File:	012309.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D-Grab	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/25/24	Lab ID:	401269-19
Date Analyzed:	01/25/24	Data File:	012512.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/25/24	Lab ID:	04-0125 mb
Date Analyzed:	01/25/24	Data File:	012508.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-01 1/5
Date Analyzed:	01/24/24	Data File:	012411.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	65	11	158
Terphenyl-d14	87	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-02 1/5
Date Analyzed:	01/24/24	Data File:	012412.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	80	45	117
2,4,6-Tribromophenol	62	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-03 1/5
Date Analyzed:	01/24/24	Data File:	012413.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	80	45	117
2,4,6-Tribromophenol	65	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-04 1/5
Date Analyzed:	01/24/24	Data File:	012414.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	73	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	69	11	158
Terphenyl-d14	83	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-05 1/5
Date Analyzed:	01/24/24	Data File:	012415.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	68	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-06 1/5
Date Analyzed:	01/24/24	Data File:	012416.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	10	198
2-Fluorobiphenyl	73	45	117
2,4,6-Tribromophenol	64	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-08 1/5
Date Analyzed:	01/24/24	Data File:	012417.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	97	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	6.5 ve
2-Methylnaphthalene	16 ve
1-Methylnaphthalene	5.8
Acenaphthylene	<0.01
Acenaphthene	0.014
Fluorene	0.053
Phenanthrene	0.088
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.020
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-08 1/50
Date Analyzed:	01/25/24	Data File:	012515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	92 d	10	198
2-Fluorobiphenyl	81 d	45	117
2,4,6-Tribromophenol	65 d	11	158
Terphenyl-d14	80 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	7.6
2-Methylnaphthalene	16

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-09 1/5
Date Analyzed:	01/24/24	Data File:	012418.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	63	10	198
2-Fluorobiphenyl	77	45	117
2,4,6-Tribromophenol	74	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-10 1/5
Date Analyzed:	01/24/24	Data File:	012419.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	65	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	67	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-12 1/5
Date Analyzed:	01/24/24	Data File:	012420.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	10	198
2-Fluorobiphenyl	75	45	117
2,4,6-Tribromophenol	68	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-13 1/5
Date Analyzed:	01/24/24	Data File:	012421.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	70	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-16 1/5
Date Analyzed:	01/24/24	Data File:	012422.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	10	198
2-Fluorobiphenyl	83	45	117
2,4,6-Tribromophenol	75	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.030
2-Methylnaphthalene	0.032
1-Methylnaphthalene	0.012
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-17 1/5
Date Analyzed:	01/24/24	Data File:	012423.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60	10	198
2-Fluorobiphenyl	74	45	117
2,4,6-Tribromophenol	72	11	158
Terphenyl-d14	89	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-18 1/5
Date Analyzed:	01/24/24	Data File:	012424.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	04-0177 mb 1/5
Date Analyzed:	01/24/24	Data File:	012410.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	10	198
2-Fluorobiphenyl	93	45	117
2,4,6-Tribromophenol	74	11	158
Terphenyl-d14	98	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/26/24
Date Analyzed: 01/29/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-22D-Grab 401269-19	710
Method Blank I4-0062MB	<5

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401253-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	93	70-130
Toluene	mg/kg (ppm)	1.0	91	70-130
Ethylbenzene	mg/kg (ppm)	1.0	93	70-130
Xylenes	mg/kg (ppm)	3.0	97	70-130
Gasoline	mg/kg (ppm)	40	95	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401268-11 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	85	70-130
Toluene	mg/kg (ppm)	1.0	85	70-130
Ethylbenzene	mg/kg (ppm)	1.0	87	70-130
Xylenes	mg/kg (ppm)	3.0	90	70-130
Gasoline	mg/kg (ppm)	40	97	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401285-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	86	70-130
Toluene	ug/L (ppb)	50	84	70-130
Ethylbenzene	ug/L (ppb)	50	88	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	97	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401269-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	104	104	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	78-121

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	100	65-151	0

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401269-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.78	96 b	102 b	75-125	6 b
Lead	mg/kg (ppm)	50	1.94	85	89	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Lead	mg/kg (ppm)	50	93	80-120

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401269-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	67	65	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	88	90	10-126	2
Vinyl chloride	mg/kg (ppm)	2	<0.05	92	89	10-138	3
Bromomethane	mg/kg (ppm)	2	<0.5	81	78	10-163	4
Chloroethane	mg/kg (ppm)	2	<0.5	82	77	10-176	6
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	89	87	10-176	2
Acetone	mg/kg (ppm)	10	<5	83	88	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	96	94	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	92	92	10-137	0
Methylene chloride	mg/kg (ppm)	2	<0.5	89	89	10-156	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	98	94	21-145	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	94	90	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	96	96	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	94	91	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	94	94	25-135	0
Chloroform	mg/kg (ppm)	2	<0.05	97	94	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	100	98	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	101	102	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	97	96	10-156	1
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	97	95	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	102	97	9-164	5
Benzene	mg/kg (ppm)	2	<0.03	95	92	29-129	3
Trichloroethene	mg/kg (ppm)	2	<0.02	95	92	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	99	95	30-135	4
Bromodichloromethane	mg/kg (ppm)	2	<0.05	104	102	23-155	2
Dibromomethane	mg/kg (ppm)	2	<0.05	95	91	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	97	97	24-155	0
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	102	100	28-144	2
Toluene	mg/kg (ppm)	2	<0.05	103	101	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	107	103	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	110	107	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	102	101	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	108	102	31-137	6
Tetrachloroethene	mg/kg (ppm)	2	<0.025	104	101	20-133	3
Dibromochloromethane	mg/kg (ppm)	2	<0.05	109	107	28-150	2
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	105	103	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	105	99	32-129	6
Ethylbenzene	mg/kg (ppm)	2	<0.05	104	101	32-137	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	103	99	31-143	4
m,p-Xylene	mg/kg (ppm)	4	<0.1	104	100	34-136	4
o-Xylene	mg/kg (ppm)	2	<0.05	105	99	33-134	6
Styrene	mg/kg (ppm)	2	<0.05	106	103	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	104	100	31-142	4
Bromoform	mg/kg (ppm)	2	<0.05	112	108	21-156	4
n-Propylbenzene	mg/kg (ppm)	2	<0.05	102	104	23-146	2
Bromobenzene	mg/kg (ppm)	2	<0.05	106	107	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	103	106	18-149	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	103	104	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	104	107	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	101	103	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	101	102	31-136	1
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	100	101	30-137	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	101	104	10-182	3
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	102	106	23-145	4
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	103	106	21-149	3
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	102	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	99	103	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	99	102	31-132	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	105	104	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	104	106	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	109	116	10-142	6
Naphthalene	mg/kg (ppm)	2	<0.05	99	102	14-157	3
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	102	106	20-144	4

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	82	10-146
Chloromethane	mg/kg (ppm)	2	103	27-133
Vinyl chloride	mg/kg (ppm)	2	99	22-139
Bromomethane	mg/kg (ppm)	2	76	10-201
Chloroethane	mg/kg (ppm)	2	71	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	94	10-196
Acetone	mg/kg (ppm)	10	98	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	104	47-128
Hexane	mg/kg (ppm)	2	101	43-142
Methylene chloride	mg/kg (ppm)	2	92	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	101	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	99	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	84	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	99	64-135
Chloroform	mg/kg (ppm)	2	99	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	110	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	104	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	94	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	99	64-136
Carbon tetrachloride	mg/kg (ppm)	2	102	60-139
Benzene	mg/kg (ppm)	2	98	65-136
Trichloroethene	mg/kg (ppm)	2	97	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	101	61-145
Bromodichloromethane	mg/kg (ppm)	2	103	57-126
Dibromomethane	mg/kg (ppm)	2	98	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	105	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	104	65-143
Toluene	mg/kg (ppm)	2	101	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	105	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	108	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	105	67-128
Tetrachloroethene	mg/kg (ppm)	2	104	68-128
Dibromochloromethane	mg/kg (ppm)	2	105	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	102	66-129
Chlorobenzene	mg/kg (ppm)	2	103	67-128
Ethylbenzene	mg/kg (ppm)	2	103	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	102	64-121
m,p-Xylene	mg/kg (ppm)	4	103	68-128
o-Xylene	mg/kg (ppm)	2	102	67-129
Styrene	mg/kg (ppm)	2	106	67-129
Isopropylbenzene	mg/kg (ppm)	2	101	68-128
Bromoform	mg/kg (ppm)	2	111	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	107	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	109	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	108	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	116	61-137
2-Chlorotoluene	mg/kg (ppm)	2	106	69-128
4-Chlorotoluene	mg/kg (ppm)	2	106	67-127
tert-Butylbenzene	mg/kg (ppm)	2	104	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	107	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	106	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	105	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	106	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	112	50-153
Naphthalene	mg/kg (ppm)	2	104	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	105	61-126

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401274-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	97	50-150
Chloroethane	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	91	50-150
Methylene chloride	ug/L (ppb)	10	<5	98	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	10-211
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	110	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	98	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	96	35-149
Tetrachloroethene	ug/L (ppb)	10	<1	103	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	100	101	64-142	1
Chloroethane	ug/L (ppb)	10	99	101	70-130	2
1,1-Dichloroethene	ug/L (ppb)	10	93	94	64-140	1
Methylene chloride	ug/L (ppb)	10	92	99	43-134	7
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	98	70-130	4
1,1-Dichloroethane	ug/L (ppb)	10	99	103	70-130	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	100	70-130	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	103	107	70-130	4
1,1,1-Trichloroethane	ug/L (ppb)	10	98	100	70-130	2
Trichloroethene	ug/L (ppb)	10	92	95	70-130	3
Tetrachloroethene	ug/L (ppb)	10	100	102	70-130	2

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401269-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	78	84	28-125	7
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	84	90	10-192	7
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	79	86	10-163	8
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	85	90	45-128	6
Acenaphthene	mg/kg (ppm)	0.83	<0.01	82	87	36-125	6
Fluorene	mg/kg (ppm)	0.83	<0.01	84	90	48-121	7
Phenanthrene	mg/kg (ppm)	0.83	<0.01	82	89	46-122	8
Anthracene	mg/kg (ppm)	0.83	<0.01	85	91	30-144	7
Fluoranthene	mg/kg (ppm)	0.83	<0.01	84	92	50-150	9
Pyrene	mg/kg (ppm)	0.83	<0.01	85	87	40-134	2
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	84	90	50-150	7
Chrysene	mg/kg (ppm)	0.83	<0.01	90	95	50-150	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	95	99	50-150	4
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	88	92	50-150	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	96	98	50-150	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	94	100	40-140	6
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	92	98	41-136	6
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	88	93	29-139	6

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	91	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	98	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	93	63-113
Acenaphthylene	mg/kg (ppm)	0.83	97	70-130
Acenaphthene	mg/kg (ppm)	0.83	95	66-112
Fluorene	mg/kg (ppm)	0.83	99	67-117
Phenanthrene	mg/kg (ppm)	0.83	93	70-130
Anthracene	mg/kg (ppm)	0.83	98	70-130
Fluoranthene	mg/kg (ppm)	0.83	102	70-130
Pyrene	mg/kg (ppm)	0.83	92	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	97	70-130
Chrysene	mg/kg (ppm)	0.83	103	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	111	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	111	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	108	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	105	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	65-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	102	104	35-146	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401269

SAMPLE CHAIN OF CUSTODY 01/22/24 C2/VW2/N3

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whitney Marine	0204475-001
REMARKS	INVOICE TO
Print C-Grams	
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	As+Pb	EDB/EDC/MTBE	TOC	EPH and VPH	A-per HG 01/24/24 ME Notes
MW-20D-56	01 A-F	1/15/24	1235	Soil	6	X	X			X	X		X	X			Hold for other
MW-21D-51	02	1/16/24	0940			X	X			X	X		X	X			analysis
MW-21D-52	03		1050			X	X			X	X		X	X	X		
MW-21D-53	04		0950			X	X			X	X		X	X			
MW-21D-54	05		1030			X	X			X	X		X	X	X		
MW-21D-55	06		1100			X	X			X	X		X	X			
MW-21D-56	07		1140			X	X	X									
MW-21D-57	08	↓	1430			X	X			X	X		X	X	X	A	
MW-22D-51	09	1/17/24	1330			X	X			X	X		X	X			
MW-22D-52	10	↓	1340	↓	↓	X	X			X	X		X	X			↓

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/22/24	0745
Received by:	VINH	FBI	1-22-24	1320
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401269

SAMPLE CHAIN OF CUSTODY 01/22/24 C2/VW2/N3

Page # _____ of _____

Report To _____

Company HA

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS: Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	~~PCBs EPA 8082~~ TSS	As+Pb	EDB/EDC/MTBE	TOC	cVOCs	Notes
MW-22D-53	11 A-F	1/17/24	1435	soil	6												Hold for
MW-22D-54	12		1500			X	X			X	X		X	X			other analysis
MW-22D-55	13		1530			X	X			X	X		X	X			
MW-22D-56	14	1/18/24	1700														
MW-22D-57	15	1/19/24	0920														
MW-22D-58	16 A-E		0950			X	X			X	X		X	X			
MW-23D-51	17 A-F	1/19/24	1500			X	X			X	X		X	X			
MW-23D-52	18		1505			X	X			X	X		X	X	A		
MW-22D-Grab	19 A-H	1/18/24	1130	water	#8	X	X	X				X	X			X	Label MW-22B-Grab GW AP 01/22

A-per HG
01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Galcahan	HA	1/22/24	0745
Received by: VM	VINA	FBI	1-22-24	1320
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401469

February 07, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 1/24/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/07/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401469

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401469-001	MW-21D-S7	01/16/2024 2:30 PM	01/24/2024 4:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401469**
Date: **2/7/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2401469**
Date Reported: **2/7/2024**

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401469-001 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42747		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	27.5	23.1		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C10-C12)	80.4	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C12-C16)	54.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C8-C10)	23.8	23.1		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C10-C12)	91.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C12-C16)	102	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C16-C21)	20.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Surr: 1-Chlorooctadecane	51.8	50 - 150		%Rec	1	2/5/2024 12:17:30 PM
Surr: o-Terphenyl	79.9	50 - 150		%Rec	1	2/5/2024 12:17:30 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42713		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C6-C8)	22.7	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C8-C10)	33.6	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C10-C12)	47.6	14.0	DH	mg/Kg-dry	10	1/31/2024 10:00:00 PM
Aromatic Hydrocarbon (C8-C10)	44.9	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aromatic Hydrocarbon (C10-C12)	29.0	14.0	DH	mg/Kg-dry	10	1/31/2024 10:00:00 PM
Aromatic Hydrocarbon (C12-C13)	18.8	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Surr: 2,5-dibromotoluene	110	60 - 140		%Rec	1	1/26/2024 1:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R89195		Analyst: YL
Percent Moisture	13.4	0.500		wt%	1	1/25/2024 9:31:14 AM

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42747**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MBLKS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867980**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	59.5		100.0		59.5	50	150				

Sample ID: **MB-42747**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MBLKS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867987**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	74.8		100.0		74.8	50	150				

Sample ID: **LCS-42747**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **LCSS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867981**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	108	20.0	250.0	0	43.1	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	69.3	10.0	125.0	0	55.5	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	72.5	10.0	125.0	0	58.0	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	72.3	10.0	125.0	0	57.8	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	89.7	10.0	125.0	0	71.8	36.6	144				
Surr: 1-Chlorooctadecane	59.3		100.0		59.3	50	150				

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42747**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **LCSS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867988**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	160	20.0	250.0	0	63.9	18.6	130				
Aromatic Hydrocarbon (C10-C12)	109	10.0	125.0	0	86.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	114	10.0	125.0	0	91.3	43.6	124				
Aromatic Hydrocarbon (C16-C21)	117	10.0	125.0	0	93.5	49.5	124				
Aromatic Hydrocarbon (C21-C34)	101	10.0	125.0	0	80.7	54.8	124				
Surr: o-Terphenyl	81.6		100.0		81.6	50	150				

Sample ID: **2401469-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867983**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	192	23.0	287.3	27.53	57.4	6.01	130				
Aliphatic Hydrocarbon (C10-C12)	201	11.5	143.6	80.37	84.1	11.6	127				
Aliphatic Hydrocarbon (C12-C16)	145	11.5	143.6	54.78	63.0	24.7	129				
Aliphatic Hydrocarbon (C16-C21)	91.7	11.5	143.6	10.07	56.9	25.5	132				
Aliphatic Hydrocarbon (C21-C34)	100	11.5	143.6	0	70.0	21.4	138				
Surr: 1-Chlorooctadecane	61.9		114.9		53.9	50	150				

Sample ID: **2401469-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867990**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	219	23.0	287.3	23.77	68.1	12.6	130				
Aromatic Hydrocarbon (C10-C12)	281	11.5	143.6	91.80	132	26.3	130				S
Aromatic Hydrocarbon (C12-C16)	253	11.5	143.6	101.7	105	23.3	139				
Aromatic Hydrocarbon (C16-C21)	121	11.5	143.6	20.82	69.6	32.2	131				
Aromatic Hydrocarbon (C21-C34)	108	11.5	143.6	0	75.4	35.8	139				
Surr: o-Terphenyl	85.3		114.9		74.2	50	150				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2401469-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867984**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	200	23.1	288.1	27.53	60.0	6.01	130	192.4	4.12	30	
Aliphatic Hydrocarbon (C10-C12)	247	11.5	144.1	80.37	115	11.6	127	201.1	20.3	30	
Aliphatic Hydrocarbon (C12-C16)	180	11.5	144.1	54.78	86.9	24.7	129	145.3	21.3	30	
Aliphatic Hydrocarbon (C16-C21)	104	11.5	144.1	10.07	65.4	25.5	132	91.74	12.8	30	
Aliphatic Hydrocarbon (C21-C34)	116	11.5	144.1	0	80.5	21.4	138	100.5	14.3	30	
Surr: 1-Chlorooctadecane	70.7		115.3		61.3	50	150		0		

Sample ID: **2401469-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867991**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	205	23.1	288.1	23.77	62.9	12.6	130	219.4	6.77	30	
Aromatic Hydrocarbon (C10-C12)	286	11.5	144.1	91.80	135	26.3	130	281.2	1.69	30	S
Aromatic Hydrocarbon (C12-C16)	265	11.5	144.1	101.7	113	23.3	139	252.9	4.60	30	
Aromatic Hydrocarbon (C16-C21)	127	11.5	144.1	20.82	73.8	32.2	131	120.8	5.17	30	
Aromatic Hydrocarbon (C21-C34)	110	11.5	144.1	0	76.5	35.8	139	108.3	1.79	30	
Surr: o-Terphenyl	84.3		115.3		73.1	50	150		0		

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42713** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **LCSS** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865040**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	20.5	2.50	20.00	0	103	70	130				
Aliphatic Hydrocarbon (C6-C8)	12.9	2.50	10.00	0	129	70	130				
Aliphatic Hydrocarbon (C8-C10)	20.3	2.50	10.00	0	203	70	130				S
Aliphatic Hydrocarbon (C10-C12)	13.1	2.50	10.00	0	131	70	130				S
Aromatic Hydrocarbon (C8-C10)	34.9	2.50	50.00	0	69.7	70	130				S
Aromatic Hydrocarbon (C10-C12)	6.27	2.50	10.00	0	62.7	70	130				S
Aromatic Hydrocarbon (C12-C13)	6.22	2.50	10.00	0	62.2	70	130				S
Surr: 2,5-dibromotoluene	2.02		2.500		81.0	60	140				

NOTES:
S - Outlying spike recovery(ies) observed. Samples will be qualified with a *.

Sample ID: **MB-42713** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **MBLKS** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.75		2.500		70.0	60	140				

Sample ID: **2401315-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **BATCH** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C10-C12)	2.21	0.997		0	0			2.132	3.80	25	Q+

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **BATCH**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	1.16	0.997		0	0			0.8308	32.7	25	BQ-
Aromatic Hydrocarbon (C10-C12)	1.17	0.997		0	0			1.288	9.87	25	Q-
Aromatic Hydrocarbon (C12-C13)	1.35	0.997		0	0			1.219	10.2	25	Q-
Surr: 2,5-dibromotoluene	0.657		0.9971		65.9	60	140		0	0	

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/25/2024**	SeqNo: **1865012**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	17.9	2.50	20.00	0	89.3	70	130				
Aliphatic Hydrocarbon (C6-C8)	11.2	2.50	10.00	0	112	70	130				
Aliphatic Hydrocarbon (C8-C10)	12.0	2.50	10.00	0	120	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.7	2.50	10.00	0	107	70	130				
Aromatic Hydrocarbon (C8-C10)	52.3	2.50	50.00	0	105	70	130				
Aromatic Hydrocarbon (C10-C12)	10.3	2.50	10.00	0	103	70	130				
Aromatic Hydrocarbon (C12-C13)	10.2	2.50	10.00	0	102	70	130				
Surr: 2,5-dibromotoluene	2.60		2.500		104	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/26/2024**	SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-42713**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MBLKS**	Batch ID: **42713**					Analysis Date: **1/26/2024**		SeqNo: **1864974**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,5-dibromotoluene	1.83		2.500		73.3	60	140				

Sample ID: **2401469-001BDUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MW-21D-S7**	Batch ID: **42713**					Analysis Date: **1/26/2024**		SeqNo: **1864986**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	24.9	1.40		0	0			22.74	9.25	25	
Aliphatic Hydrocarbon (C8-C10)	33.5	1.40		0	0			33.57	0.230	25	
Aromatic Hydrocarbon (C8-C10)	44.7	1.40		0	0			44.93	0.405	25	
Aromatic Hydrocarbon (C12-C13)	19.2	1.40		0	0			18.77	2.48	25	
Surr: 2,5-dibromotoluene	1.49		1.401		106	60	140		0	0	

Sample ID: **2401469-001BDUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MW-21D-S7**	Batch ID: **42713**					Analysis Date: **1/31/2024**		SeqNo: **1868193**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	49.0	14.0		0	0			47.58	2.92	25	DH
Aromatic Hydrocarbon (C10-C12)	29.2	14.0		0	0			29.04	0.665	25	DH
Surr: 2,5-dibromotoluene	10.0		14.01		71.4	60	140		0	0	DH

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401469
Logged by:	Clare Griggs	Date Received:	1/24/2024 4:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ MeOH
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☐	No ☑	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401469

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
401269	D-645

REMARKS: EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: EPH	VPH									Notes
MW-21D-S7		1/16/2024	1430	soil	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/24/24	1515
Received by:		Matthew Wolfe	FAI	1/24/24	1630
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401419

January 30, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 1/23/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/30/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401419

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401419-001	MW-21D-S2	01/16/2024 10:50 AM	01/23/2024 1:30 PM
2401419-002	MW-21D-S4	01/16/2024 10:30 AM	01/23/2024 1:30 PM
2401419-003	MW-21D-S7	01/16/2024 2:30 PM	01/23/2024 1:30 PM
2401419-004	MW-21D-S2	01/19/2024 3:05 PM	01/23/2024 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401419**
Date: **1/30/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401419-001 **Collection Date:** 1/16/2024 10:50:00 AM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 1:05:00 PM

Lab ID: 2401419-002 **Collection Date:** 1/16/2024 10:30:00 AM
Client Sample ID: **MW-21D-S4** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 2:32:00 PM

Lab ID: 2401419-003 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:15:00 PM

Lab ID: 2401419-004 **Collection Date:** 1/19/2024 3:05:00 PM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:32:00 PM

Work Order: 2401419
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42741**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MBLKS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864259**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42741**	SampType: **LCS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **LCSS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864260**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.07	0.150	1.000	0	107	80	120				

Sample ID: **2401419-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864262**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2401419-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864263**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125				

Sample ID: **2401419-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864264**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.04	0.150	1.000	0	104	75	125	1.106	6.63	20	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401419
Logged by:	Clare Griggs	Date Received:	1/23/2024 1:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 401269

PO #: D-641

REMARKS: EIM and EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Total Organic Carbon	Nitrate	Nitrite	Sulfate	RSK-175						Notes
						ANALYSES REQUESTED										
MW-21D-S2		1/16/2024	1050	soil	1	x										
MW-21D-S4		1/16/2024	1030	soil	1	x										
MW-21D-S7		1/16/2024	1430	soil	1	x										
MW-23D-S2		1/19/2024	1505	soil	1	x										

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/23/24	0840
Received by:		Nathan Koppes	F&B	1/23/24	1330
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 16, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 6, 2024 from the Whidbey Marine 0204475-001, F&BI 402067 project. There are 33 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0216R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402067 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402067 -01	MW-1S
402067 -02	MW-3S
402067 -03	MW-22D
402067 -04	MW-23D

Samples MW-22D and MW-3D were sent to Fremont Analytical for TOC, nitrate, nitrite, sulfate, chloride, ammonia, alkalinity, sulfide, and dissolved gases analyses. The report is enclosed.

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D 402067-03	220	99
MW-23D 402067-04 1/20	62,000	103
Method Blank 04-202 MB	<100	92

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-1S 402067-01	<1	<1	<1	<3	<100	77
MW-3S 402067-02	<1	<1	<1	<3	<100	86
Method Blank 04-202 MB	<1	<1	<1	<3	<100	81

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1S 402067-01 1/1.2	<60	<300	98
MW-3S 402067-02 1/1.2	<60	<300	104
MW-22D 402067-03 1/1.2	<60	<300	99
MW-23D 402067-04 1/1.2	2,900 x	<300	103
Method Blank 04-325 MB	<50	<250	94

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-1S 402067-01 1/1.2	70 x	<300	98
MW-3S 402067-02 1/1.2	63 x	<300	102
MW-22D 402067-03 1/1.2	130 x	<300	101
MW-23D 402067-04 1/1.2	7,000 x	<300	102
Method Blank 04-325 MB	<50	<250	92

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	402067-03.160
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.56
Lead	1.48

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03 x50
Date Analyzed:	02/09/24	Data File:	402067-03 x50.077
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	1,010

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	402067-04.161
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.4
Lead	1.26

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04 x50
Date Analyzed:	02/09/24	Data File:	402067-04 x50.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,000

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	I4-101 mb
Date Analyzed:	02/08/24	Data File:	I4-101 mb.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	402067-03.162
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.07
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	402067-04.163
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.6
Lead	1.59

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	I4-99 mb
Date Analyzed:	02/08/24	Data File:	I4-99 mb.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1S	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-01
Date Analyzed:	02/07/24	Data File:	020719.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-02
Date Analyzed:	02/07/24	Data File:	020720.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	106	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-03
Date Analyzed:	02/07/24	Data File:	020721.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	106	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	8.9
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	26
Hexane	<5	o-Xylene	11
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	1.6
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	4.3
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	9.7	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	2.2
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-04 1/200
Date Analyzed:	02/07/24	Data File:	020722.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<200	1,3-Dichloropropane	<200
Chloromethane	<2,000	Tetrachloroethene	<200
Vinyl chloride	<4	Dibromochloromethane	<100
Bromomethane	<1,000	1,2-Dibromoethane (EDB)	<2
Chloroethane	<200	Chlorobenzene	<200
Trichlorofluoromethane	<200 ca	Ethylbenzene	1,300
Acetone	<10,000 ca	1,1,1,2-Tetrachloroethane	<200
1,1-Dichloroethene	<200	m,p-Xylene	4,400
Hexane	<1,000	o-Xylene	1,000
Methylene chloride	<1,000	Styrene	<200
Methyl t-butyl ether (MTBE)	<200	Isopropylbenzene	<200
trans-1,2-Dichloroethene	<200	Bromoform	<1,000
1,1-Dichloroethane	<200	n-Propylbenzene	<200
2,2-Dichloropropane	<200	Bromobenzene	<200
cis-1,2-Dichloroethene	<200	1,3,5-Trimethylbenzene	220
Chloroform	<200	1,1,2,2-Tetrachloroethane	<40
2-Butanone (MEK)	<4,000	1,2,3-Trichloropropane	<200
1,2-Dichloroethane (EDC)	<40	2-Chlorotoluene	<200
1,1,1-Trichloroethane	<200	4-Chlorotoluene	<200
1,1-Dichloropropene	<200	tert-Butylbenzene	<200
Carbon tetrachloride	<100	1,2,4-Trimethylbenzene	580
Benzene	11 j	sec-Butylbenzene	<200
Trichloroethene	<100	p-Isopropyltoluene	<200
1,2-Dichloropropane	<200	1,3-Dichlorobenzene	<200
Bromodichloromethane	<100	1,4-Dichlorobenzene	<200
Dibromomethane	<200	1,2-Dichlorobenzene	<200
4-Methyl-2-pentanone	<2,000	1,2-Dibromo-3-chloropropane	<2,000
cis-1,3-Dichloropropene	<80	1,2,4-Trichlorobenzene	<200
Toluene	15,000	Hexachlorobutadiene	<100
trans-1,3-Dichloropropene	<80	Naphthalene	380
1,1,2-Trichloroethane	<100	1,2,3-Trichlorobenzene	<200
2-Hexanone	<2,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	04-0284 mb
Date Analyzed:	02/07/24	Data File:	020709.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.025 j	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	020816.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	11	173
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	65 ca	10	140
Terphenyl-d14	74	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	1.4
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	020817.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	98	11	173
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	95 ca	10	140
Terphenyl-d14	80	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	160 ve
2-Methylnaphthalene	72 ve
1-Methylnaphthalene	32
Acenaphthylene	<0.02
Acenaphthene	0.10
Fluorene	0.18
Phenanthrene	0.18
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04 1/100
Date Analyzed:	02/09/24	Data File:	020916.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60 d	15	144
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	280 d	10	142
Terphenyl-d14	80 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	230
2-Methylnaphthalene	65

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	04-0335 mb
Date Analyzed:	02/08/24	Data File:	020811a.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	15	144
2-Fluorobiphenyl	65	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/09/24
Date Analyzed: 02/12/24

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-22D 402067-03	82
MW-23D 402067-04	46
Method Blank I4-0105 MB	<5

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402067-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	96	70-130
Toluene	ug/L (ppb)	50	88	70-130
Ethylbenzene	ug/L (ppb)	50	82	70-130
Xylenes	ug/L (ppb)	150	80	70-130
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 402100-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	22.1	83 b	81 b	75-125	2 b
Lead	ug/L (ppb)	10	<1	86	87	75-125	1
Manganese	ug/L (ppb)	20	2.76	92	95	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Lead	ug/L (ppb)	10	93	80-120
Manganese	ug/L (ppb)	20	100	80-120

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	13.4	95 b	97 b	75-125	2 b
Lead	ug/L (ppb)	10	1.15	81	78	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Lead	ug/L (ppb)	10	93	80-120

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402068-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	30-221
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	99	50-150
Bromomethane	ug/L (ppb)	10	<5	94	50-150
Chloroethane	ug/L (ppb)	10	<1	96	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	79	50-150
Acetone	ug/L (ppb)	50	<50	44	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	88	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	91	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	93	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	92	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
Chloroform	ug/L (ppb)	10	<1	89	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	84	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	91	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	87	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	88	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	100	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	93	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	101	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
Tetrachloroethene	ug/L (ppb)	10	3.6	95 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	105	50-150
Chlorobenzene	ug/L (ppb)	10	<1	95	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	89	50-150
Styrene	ug/L (ppb)	10	<1	88	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	86	50-150
Bromoform	ug/L (ppb)	10	<5	108	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	114	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	108	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	105	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	50-150
Naphthalene	ug/L (ppb)	10	<1	103	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	94	50-150

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	105	104	46-206	1
Chloromethane	ug/L (ppb)	10	105	103	59-132	2
Vinyl chloride	ug/L (ppb)	10	100	99	64-142	1
Bromomethane	ug/L (ppb)	10	93	102	50-197	9
Chloroethane	ug/L (ppb)	10	97	96	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	87	75	51-159	15
Acetone	ug/L (ppb)	50	51	52	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	90	90	64-140	0
Hexane	ug/L (ppb)	10	100	102	54-136	2
Methylene chloride	ug/L (ppb)	10	97	93	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	96	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	95	70-130	3
1,1-Dichloroethane	ug/L (ppb)	10	94	94	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	97	96	64-148	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	70-130	0
Chloroform	ug/L (ppb)	10	87	90	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	75	89	47-112	17
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	93	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	89	88	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	95	92	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	102	101	70-130	1
Benzene	ug/L (ppb)	10	101	98	70-130	3
Trichloroethene	ug/L (ppb)	10	93	90	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	95	70-130	4
Bromodichloromethane	ug/L (ppb)	10	98	94	70-130	4
Dibromomethane	ug/L (ppb)	10	103	100	70-130	3
4-Methyl-2-pentanone	ug/L (ppb)	50	103	105	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	96	69-131	4
Toluene	ug/L (ppb)	10	99	97	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	99	96	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	104	101	70-130	3
2-Hexanone	ug/L (ppb)	50	91	90	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	110	103	70-130	7
Tetrachloroethene	ug/L (ppb)	10	99	98	70-130	1
Dibromochloromethane	ug/L (ppb)	10	106	101	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	109	107	70-130	2
Chlorobenzene	ug/L (ppb)	10	98	99	70-130	1
Ethylbenzene	ug/L (ppb)	10	99	98	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	96	70-130	0
m,p-Xylene	ug/L (ppb)	20	96	96	70-130	0
o-Xylene	ug/L (ppb)	10	92	91	70-130	1
Styrene	ug/L (ppb)	10	91	88	70-130	3
Isopropylbenzene	ug/L (ppb)	10	90	90	70-130	0
Bromoform	ug/L (ppb)	10	119	111	69-138	7
n-Propylbenzene	ug/L (ppb)	10	107	104	70-130	3
Bromobenzene	ug/L (ppb)	10	105	103	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	126	122	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	118	114	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	104	100	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	102	100	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	107	104	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	99	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	104	103	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	106	105	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	103	101	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	102	100	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	119	117	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	99	105	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	100	111	70-130	10
Naphthalene	ug/L (ppb)	10	113	119	70-130	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	106	114	70-130	7

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	66	64	50-104	3
2-Methylnaphthalene	ug/L (ppb)	5	71	69	52-113	3
1-Methylnaphthalene	ug/L (ppb)	5	69	67	51-115	3
Acenaphthylene	ug/L (ppb)	5	80	78	60-114	3
Acenaphthene	ug/L (ppb)	5	77	76	57-110	1
Fluorene	ug/L (ppb)	5	84	84	61-115	0
Phenanthrene	ug/L (ppb)	5	84	86	63-113	2
Anthracene	ug/L (ppb)	5	86	89	65-117	3
Fluoranthene	ug/L (ppb)	5	92	95	68-121	3
Pyrene	ug/L (ppb)	5	88	90	62-133	2
Benz(a)anthracene	ug/L (ppb)	5	89	94	66-131	5
Chrysene	ug/L (ppb)	5	91	95	66-129	4
Benzo(a)pyrene	ug/L (ppb)	5	95	101	66-129	6
Benzo(b)fluoranthene	ug/L (ppb)	5	88	92	55-144	4
Benzo(k)fluoranthene	ug/L (ppb)	5	92	99	58-139	7
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	103	105	62-136	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	99	102	55-146	3
Benzo(g,h,i)perylene	ug/L (ppb)	5	97	100	58-137	3

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	84	98	35-146	15

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402067

SAMPLE CHAIN OF CUSTODY

02/06/24

VW4/KS/F31

Page # ____ of ____

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0260475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

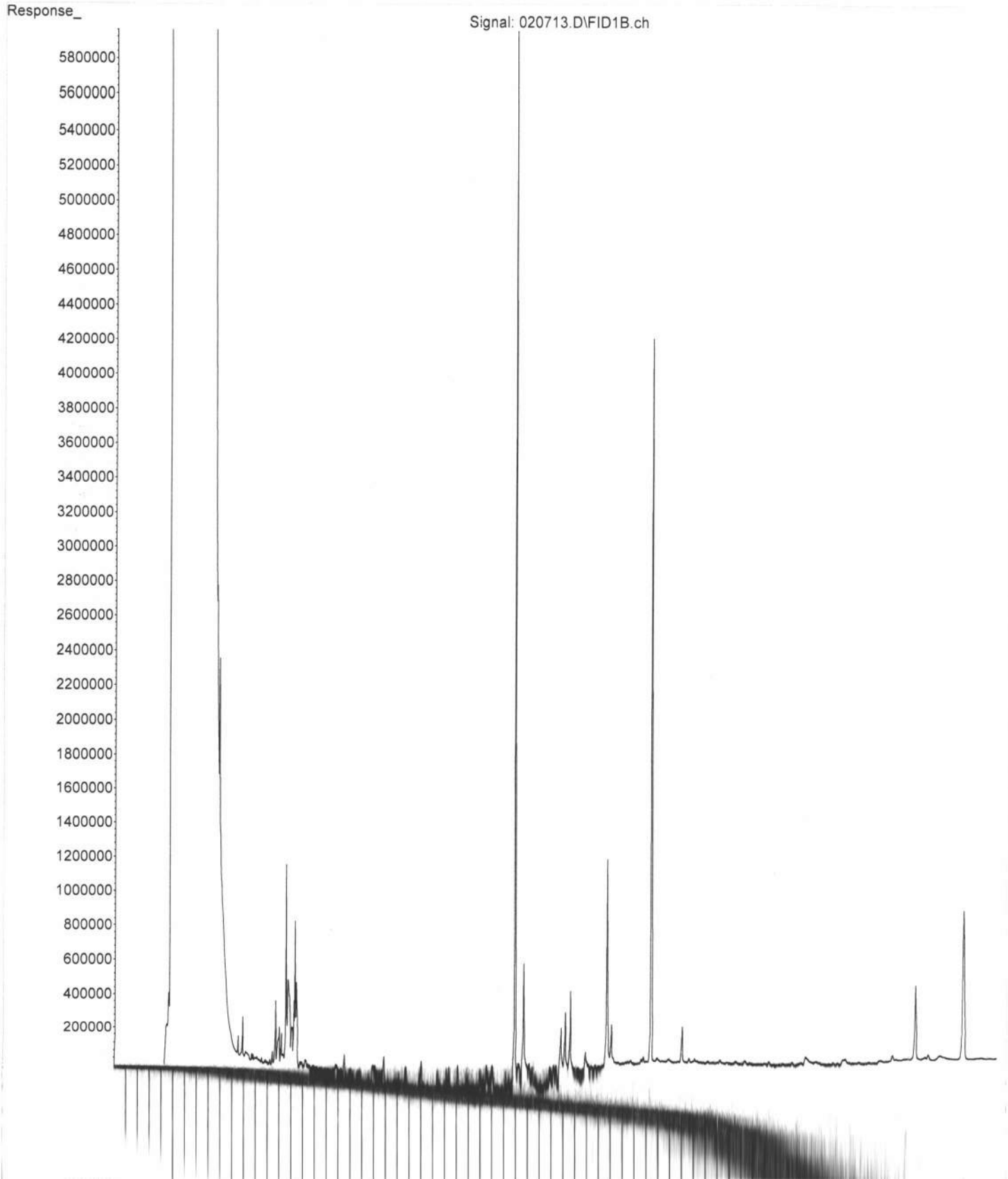
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	Geochemical ~~NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~CVOCs PCBs EPA 8082~~	NwTPH-Dx w/ Silica gel cleanup	TOC	TSS	Tot, Dis As+Pb	Notes
MW-1S	01 A-G	4/5/24	1430	water	7	X	X	X				X	X				Geochemical
MW-3S	02 A-G	↓	1200	↓	7	X	X	X				X	X				parameters:
MW-22D	03 A-O	↓	1540	↓	17	X	X		X	X	X		X	X	X	X	nitrate, nitrite
MW-23D	~~DUP~~ 04 A-O	↓	1240	↓	16	X	X		X	X	X		X	X	X	X	ammonia, chloride
																	sulfate, alkalinity
																	sulfide, MEE
																	dissolved ~~coal~~
																	manganese
																	include Dx, -O
																	chromatograms

NO Fe per HG 2/7/24 ME

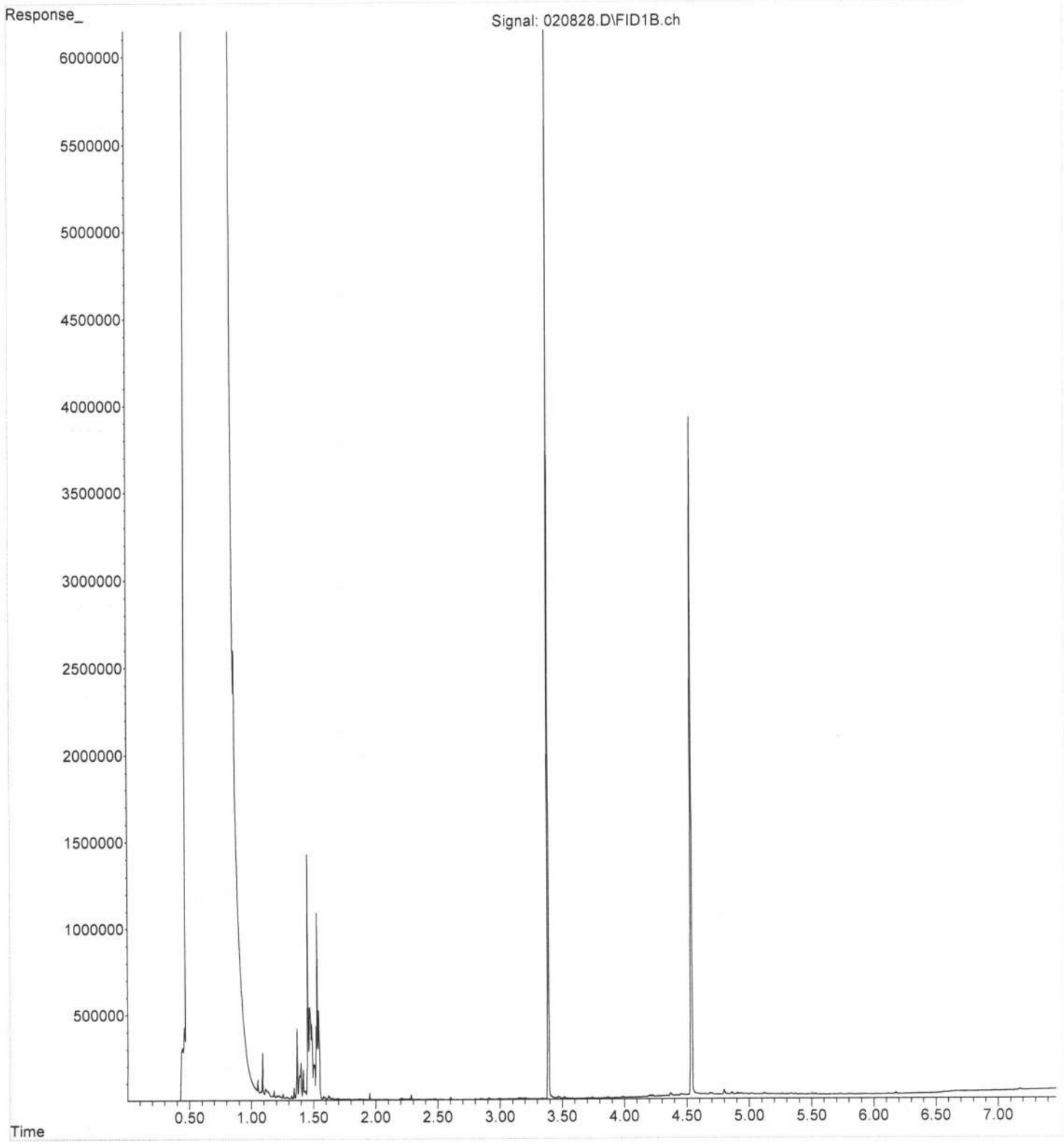
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	4/6/24	1220
Received by: HONG	HONG NGUYEN	FBI	4/6/24	12:20
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

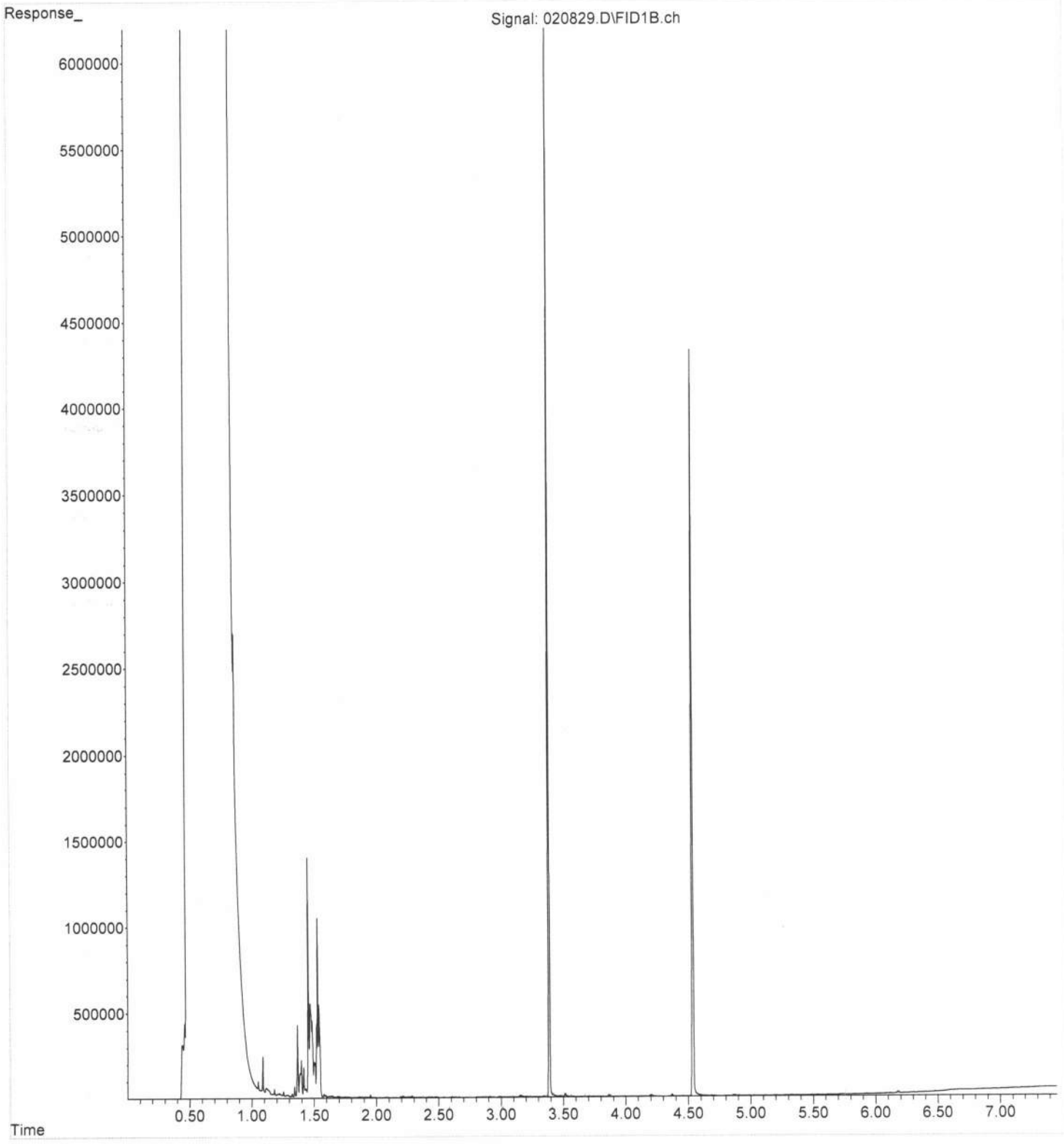
File :P:\Proc_GC14\02-07-24\020713.D
Operator : TL
Acquired : 07 Feb 2024 03:29 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01
Misc Info : ERR
Vial Number: 13



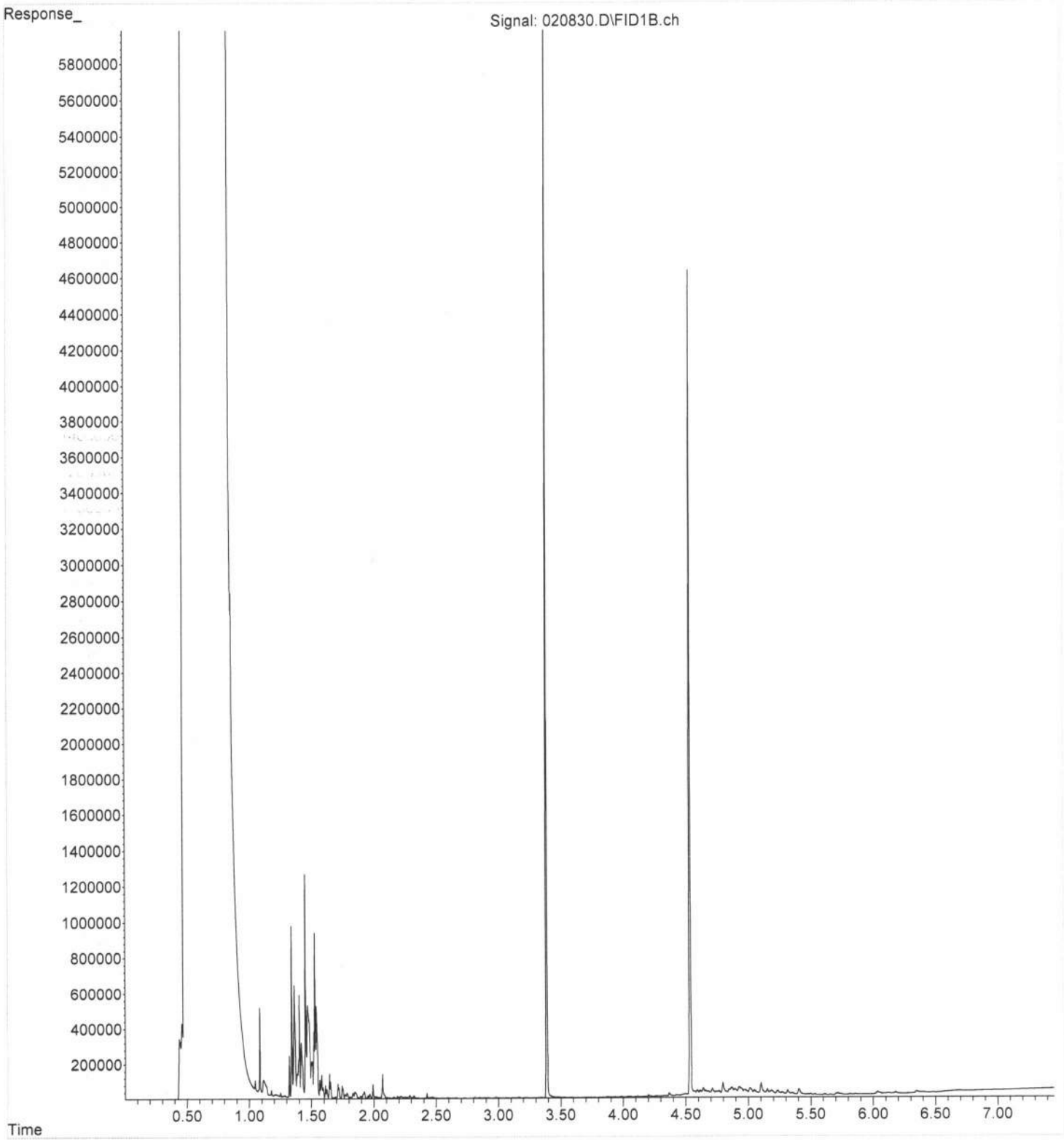
File :P:\Proc_GC14\02-08-24\020828.D
Operator : TL
Acquired : 08 Feb 2024 05:08 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01 sg
Misc Info : ERR
Vial Number: 23



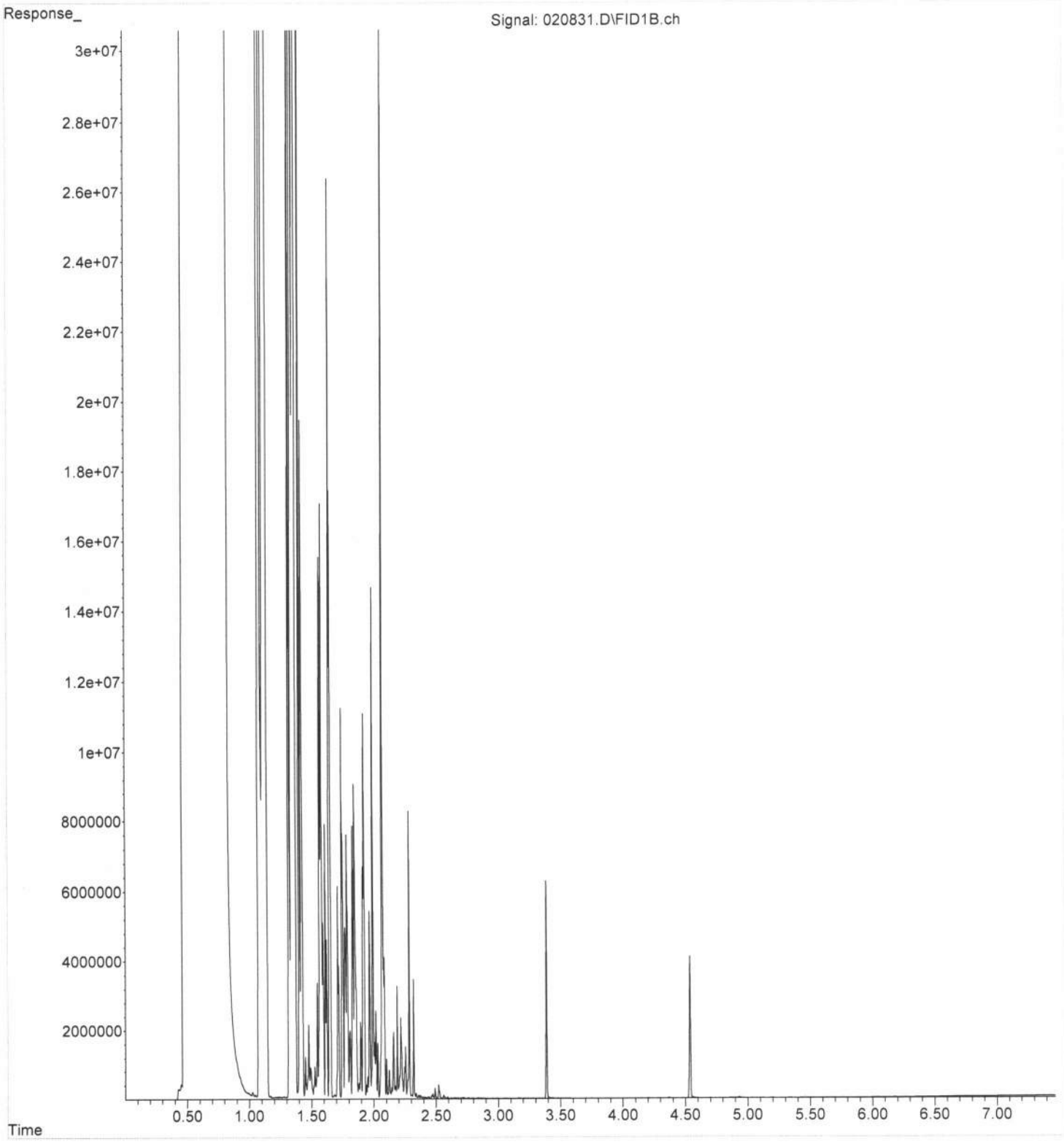
File :P:\Proc_GC14\02-08-24\020829.D
Operator : TL
Acquired : 08 Feb 2024 05:20 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-02 sg
Misc Info : ERR
Vial Number: 24



File :P:\Proc_GC14\02-08-24\020830.D
Operator : TL
Acquired : 08 Feb 2024 05:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-03 sg
Misc Info : ERR
Vial Number: 25

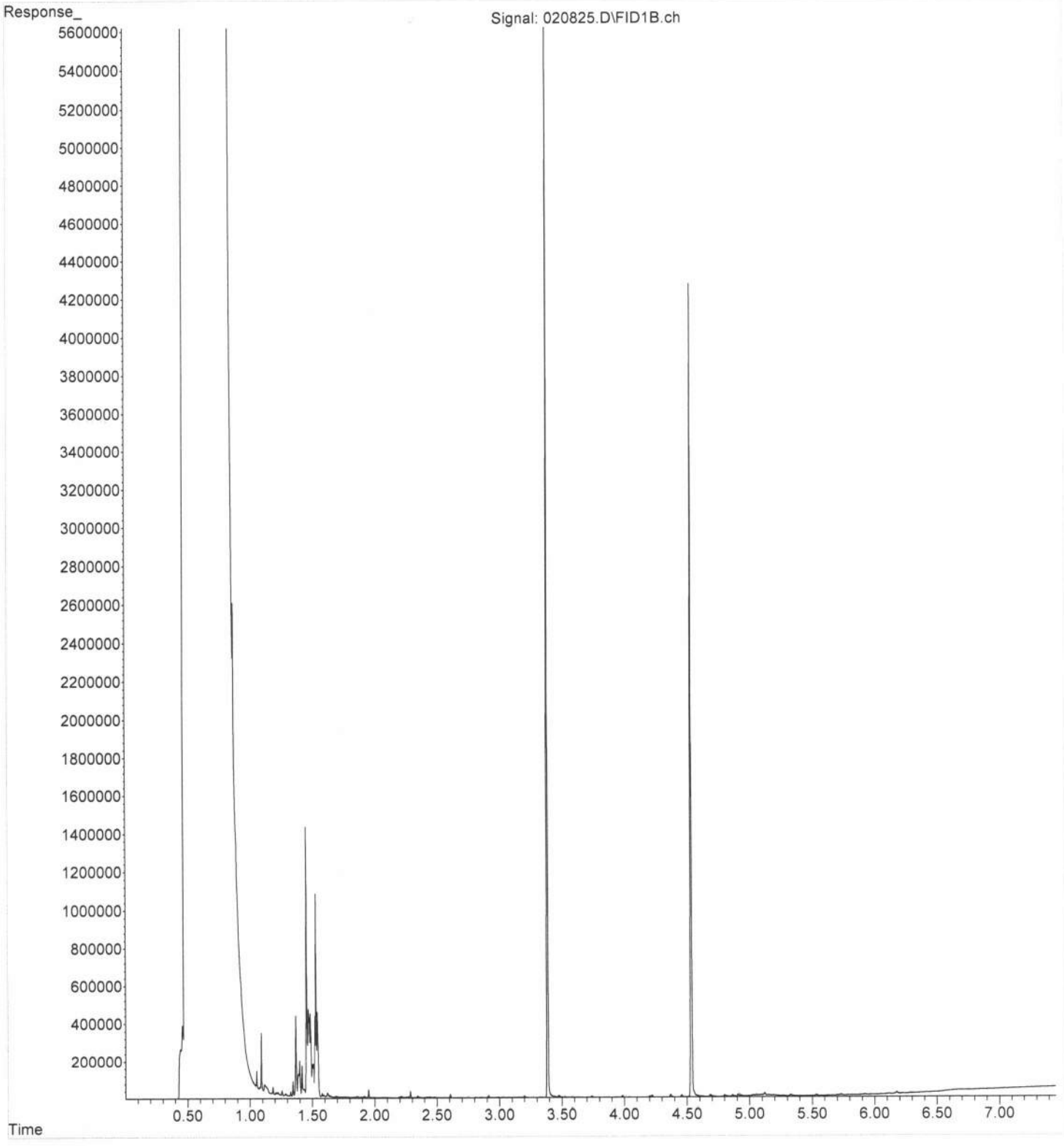


File :P:\Proc_GC14\02-08-24\020831.D
Operator : TL
Acquired : 08 Feb 2024 05:43 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-04 sg
Misc Info : ERR
Vial Number: 26

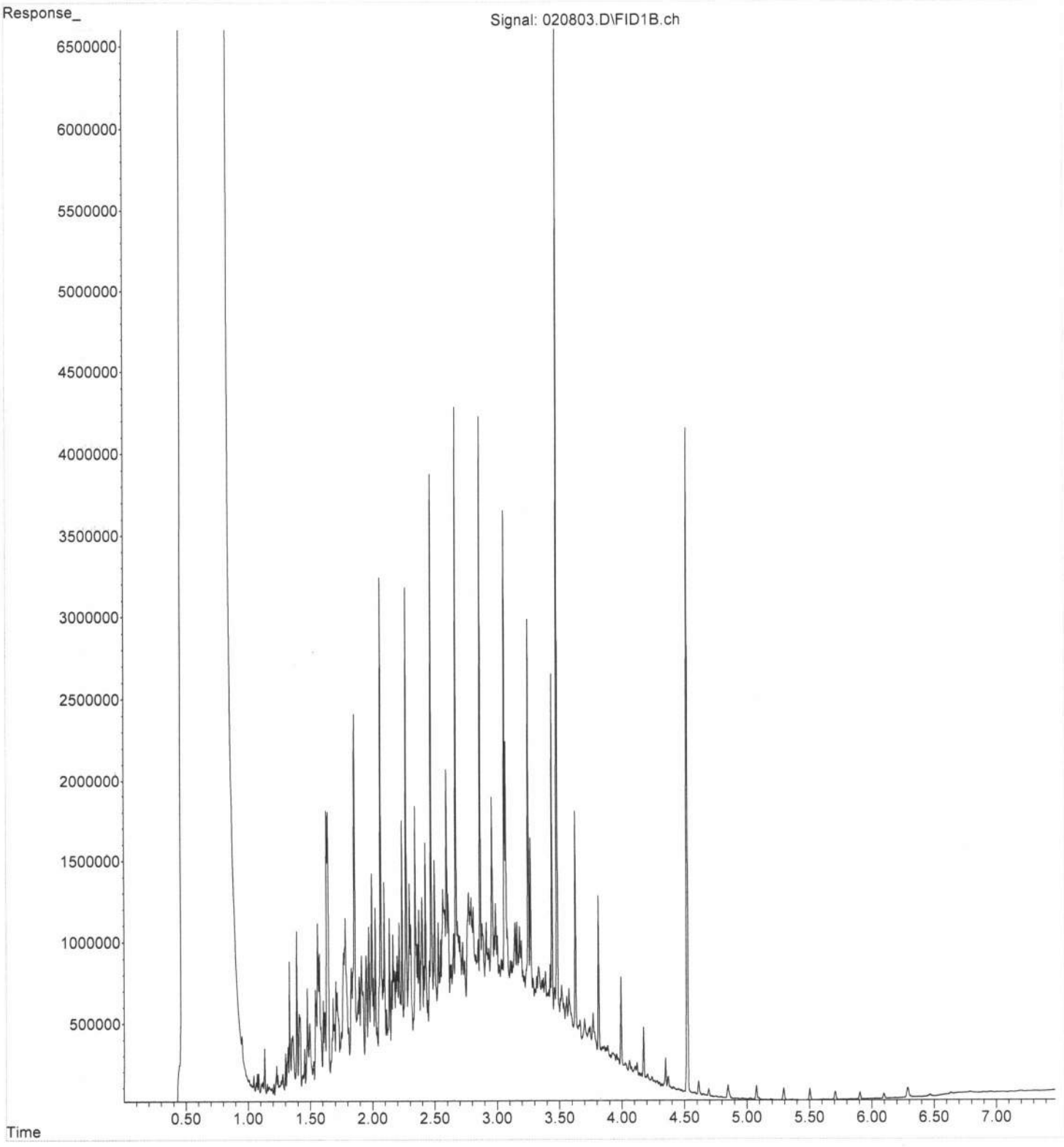


File :P:\Proc_GC14\02-08-24\020825.D
Operator : TL
Acquired : 08 Feb 2024 04:33 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-325 mb sg
Misc Info :
Vial Number: 20

ERR



File :P:\Proc_GC14\02-08-24\020803.D
Operator : TL
Acquired : 08 Feb 2024 09:00 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402067
Work Order Number: 2402085

February 13, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/13/2024*

CLIENT: Friedman & Bruya
Project: 402067
Work Order: 2402085

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402085-001	MW-22D	02/05/2024 3:40 PM	02/06/2024 3:40 PM
2402085-002	MW-23D	02/05/2024 12:40 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402085**
Date: **2/13/2024**

CLIENT: Friedman & Bruya
Project: 402067

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-001 **Collection Date:** 2/5/2024 3:40:00 PM
Client Sample ID: **MW-22D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/12/2024 12:59:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 12:59:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 12:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	6.32	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:25:00 AM
Sulfate	7.03	3.00	D	mg/L	5	2/7/2024 12:25:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.48	0.700		mg/L	1	2/8/2024 9:12:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	147	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:42:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	ND	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-002 **Collection Date:** 2/5/2024 12:40:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	0.0599	0.00675		mg/L	1	2/12/2024 1:02:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 1:02:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 1:02:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	27.1	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:48:00 AM
Sulfate	ND	3.00	D	mg/L	5	2/7/2024 12:48:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	11.3	0.700		mg/L	1	2/8/2024 9:45:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	244	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:47:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.0672	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89571**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MBLKW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89571**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **LCSW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	86.2	126.2				

Sample ID: **2402085-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MW-22D**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	153	2.50						146.5	4.54	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **MBLKW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **LCSW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869932**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869934**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869935**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42841**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **MBLKW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867805**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42841**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **LCSW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867806**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.736	0.120	0.7500	0	98.1	90	110				
Nitrite (as N)	0.716	0.120	0.7500	0	95.5	90	110				
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Sulfate	3.57	0.600	3.750	0	95.1	90	110				

Sample ID: **2401588-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867808**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.211	0.120						0.2080	1.43	20	
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.162	0.100						0.1600	1.24	20	
Sulfate	ND	0.600						0		20	

Sample ID: **2401588-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.5	0.120	0.7500	0.2080	4,180	80	120				ES
Nitrite (as N)	0.735	0.120	0.7500	0	98.0	80	120				
Nitrate (as N)	1.06	0.100	0.7500	0.1600	120	80	120				S

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2401588-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	9.73	0.600	3.750	0.2550	253	80	120				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2401588-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867810**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.4	0.120	0.7500	0.2080	4,160	80	120	31.53	0.346	20	ES
Nitrite (as N)	0.727	0.120	0.7500	0	96.9	80	120	0.7350	1.09	20	
Nitrate (as N)	1.05	0.100	0.7500	0.1600	119	80	120	1.061	0.947	20	
Sulfate	9.59	0.600	3.750	0.2550	249	80	120	9.733	1.48	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **CCB-D**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2402100-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869477**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/10/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/10/2024**	SeqNo: **1869438**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89591**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **LCSW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870309**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	964	0.00675	1,000	0	96.4	73.6	124				
Ethene	962	0.0146	1,000	0	96.2	76.3	122				
Ethane	1,010	0.0151	1,000	0	101	76.1	123				

Sample ID: **MB-R89591**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **MBLKW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870308**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **BATCH**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	3.33	0.00675						3.177	4.57	30	E
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402085
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402085

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402067	D-661

REMARKS

EIM and EQuIS

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Ammonia	Chloride	RSK-175	Sulfate	Alkalinity	Sulfide	TOC		Notes
MW-22D		2/5/2024	1540	water	6	x	x	x	x	x	x	x	x	x		
MW-23D		2/5/2024	1240	water	6	x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1245
Received by:		Nathan Koffler	FAI	2/6/24	1540
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 8, 2024 from the Whidbey Marine 0204475, F&BI 402114 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0219R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 8, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475, F&BI 402114 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402114 -01	MW-10D-W
402114 -02	MW-11D-W

All quality control requirements were acceptable.

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-10D-W 402114-01	<1	<1	<1	<3	<100	87
MW-11D-W 402114-02	<1	<1	<1	<3	<100	87
Method Blank 04-206 MB	<1	<1	<1	<3	<100	85

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/16/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-10D-W 402114-01 1/1.2	<60	<300	97
MW-11D-W 402114-02	<50	<250	102
Method Blank 04-336 MB2	<50	<250	114

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-10D-W 402114-01 1/1.2	<60	<300	98
MW-11D-W 402114-02	71 x	<250	99
Method Blank 04-336 MB2	<50	<250	108

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402114-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	92	70-130
Toluene	ug/L (ppb)	50	92	70-130
Ethylbenzene	ug/L (ppb)	50	88	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	98	70-130

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	92	65-151	9

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	80	92	65-151	14

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 02/08/24 F2/VW1

402114

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey Marine	0204475
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

Page # 1 of 1

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

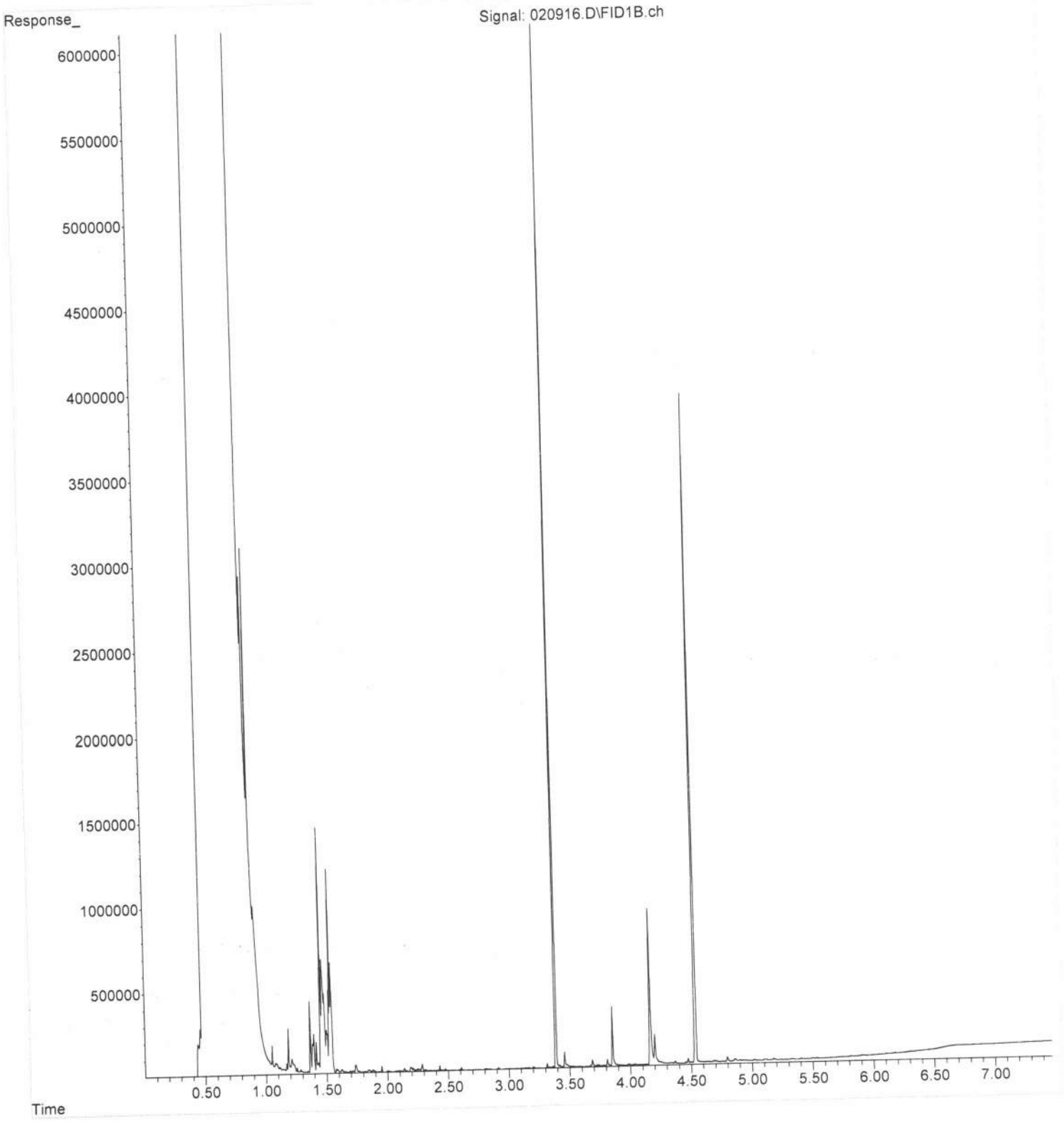
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW-10D-W	01 A-G	2/7/24	1245	W	7	X	X	X									For both samples:
MW-11D-W	02 ↓	↓	1125	W	7	X	X	X									DX w/& w/o sgc
																	chromatograms for TPH analyses
							Samples received at 2 °C										

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/8/24	1120
Received by:	ANH PHAN	F&B	02/08/24	11:20
Relinquished by:				
Received by:				

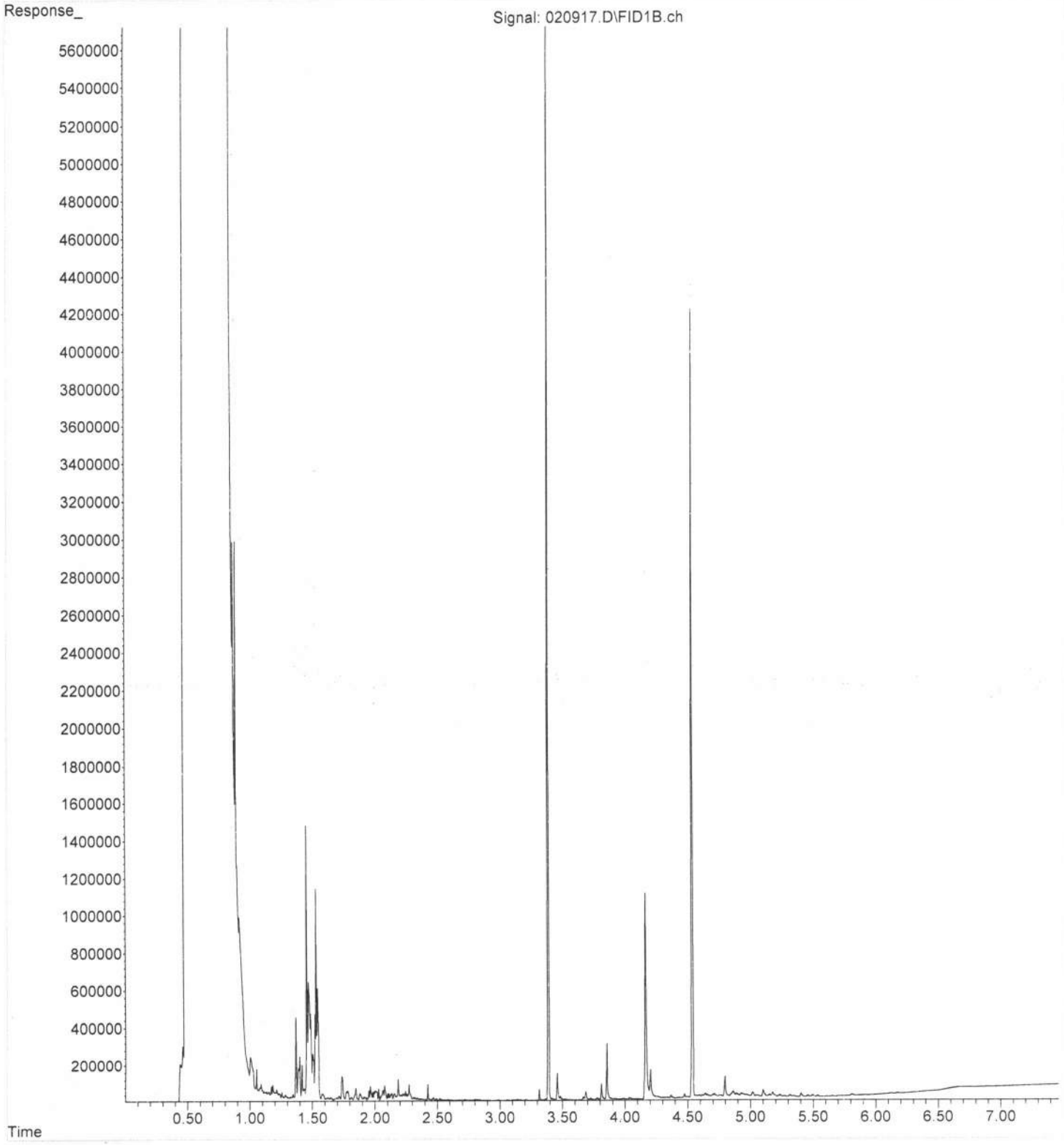
Friedman & Bruya, Inc.
Ph. (206) 285-8282

File :P:\Proc_GC14\02-09-24\020916.D
Operator : TL
Acquired : 09 Feb 2024 11:27 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402114-01 ERR
Misc Info :
Vial Number: 16



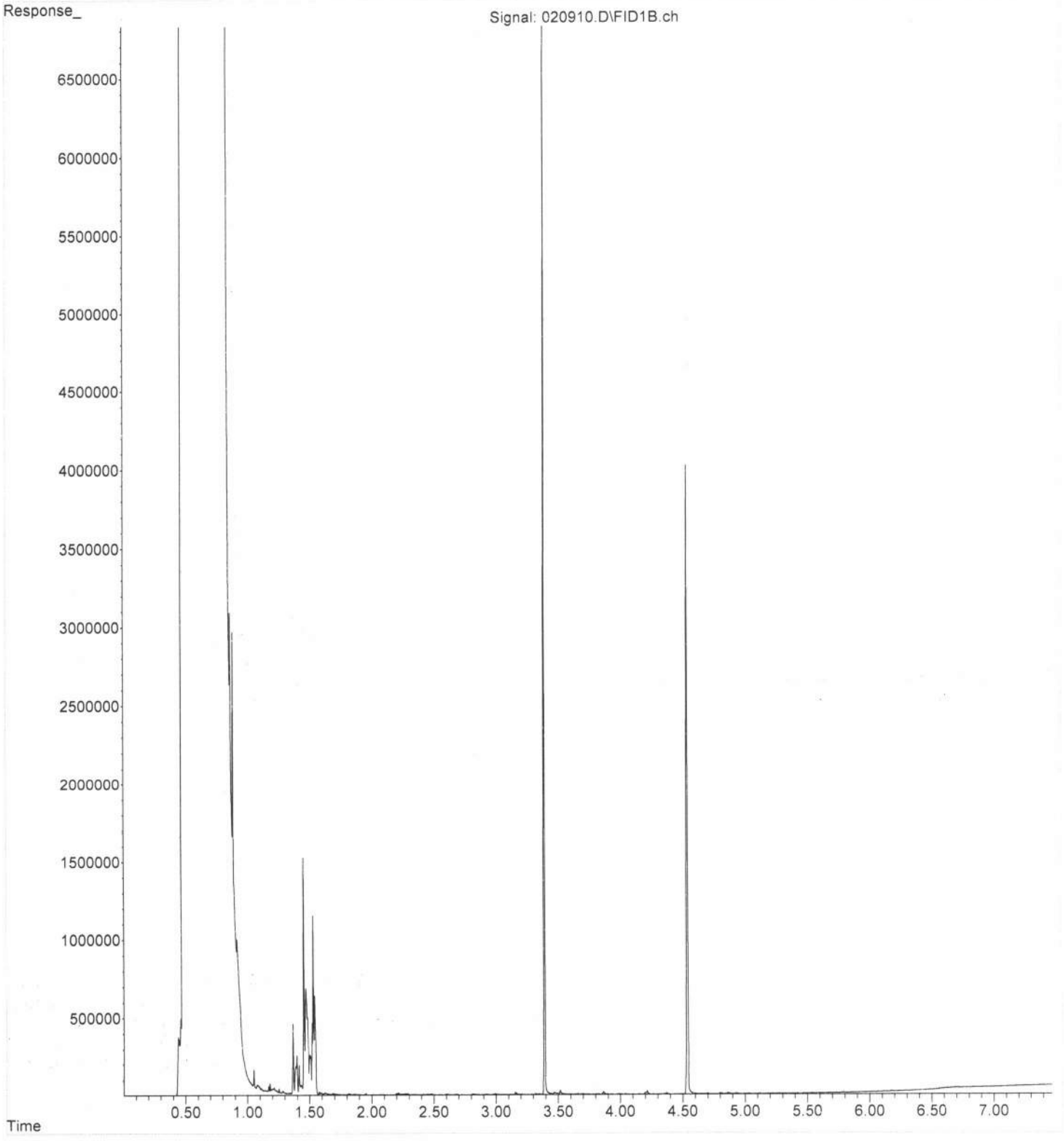
File :P:\Proc_GC14\02-09-24\020917.D
Operator : TL
Acquired : 09 Feb 2024 11:38 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402114-02
Misc Info :
Vial Number: 17

ERR



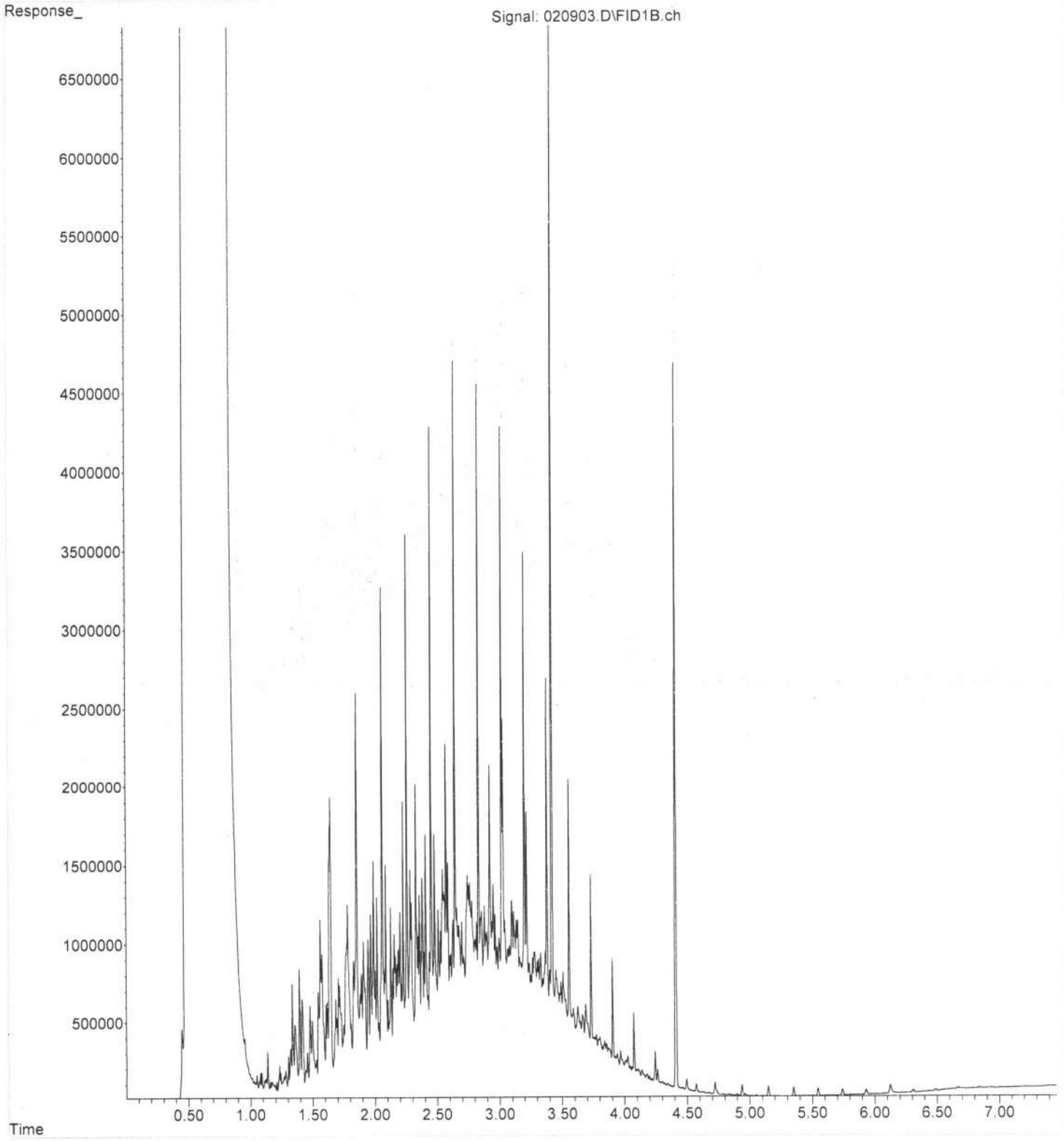
File :P:\Proc_GC14\02-09-24\020910.D
Operator : TL
Acquired : 09 Feb 2024 10:17 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-336 mb2
Misc Info :
Vial Number: 10

ERR



File :P:\Proc_GC14\02-09-24\020903.D
Operator : TL
Acquired : 09 Feb 2024 08:55 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info :
Vial Number: 3

ERR



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 20, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 7, 2024 from the Whidbey Marine 0204475, F&BI 402092 project. There are 39 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0220R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 7, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475, F&BI 402092 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402092 -01	MW-19D-W
402092 -02	MW-20D-W
402092 -03	MW-21D-W
402092 -04	DUP-01
402092 -05	Trip Blank

The samples were sent to Fremont Analytical for TOC, nitrate, nitrite, sulfate, chloride, ammonia, alkalinity, sulfide, and dissolved gases analyses. The report is enclosed.

The dissolved metals samples were filtered at Friedman and Bruya. The data were flagged accordingly.

The 8260D calibration standard did not meet the acceptance criteria for acetone and 2-butanone. The data were flagged accordingly.

The 8270E calibration standard associated with sample MW-19D-W did not meet the acceptance criteria for 2,4,6-tribromophenol surrogate. The data were flagged accordingly.

The NWTPH-Dx diesel calibration standard exceeded the acceptance criteria for the silica gel analysis of samples MW-21D-W and DUP-01. No material was detected in that range, therefore this did not represent an out of control condition, and the data were qualified with a "k" qualifier.

All other quality control requirements were acceptable.

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19D-W 402092-01	<100	115
MW-20D-W 402092-02	<100	116
MW-21D-W 402092-03	6,600	135
DUP-01 402092-04	6,100	132
Method Blank 04-203 MB	<100	92

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/16/24 and 02/19/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-19D-W 402092-01	<50	<250	95
MW-20D-W 402092-02	<50	<250	99
MW-21D-W 402092-03	1,400 x	<250 k	103
DUP-01 402092-04	1,500 x	<250 k	95
Method Blank 04-325 MB2	<50	<250	120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-W 402092-01	<50	<250	94
MW-20D-W 402092-02	110 x	<250	94
MW-21D-W 402092-03	1,600 x	<250	103
DUP-01 402092-04	1,600 x	<250	90
Method Blank 04-325 MB2	<50	<250	112

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-19D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/12/24	Data File:	402092-01.071
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	10.9
Lead	<1
Manganese	73.2

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/12/24	Data File:	402092-02.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.61
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02 x100
Date Analyzed:	02/13/24	Data File:	402092-02 x100.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	1,180

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/12/24	Data File:	402092-03.140
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.51
Lead	2.53

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03 x10
Date Analyzed:	02/12/24	Data File:	402092-03 x10.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	189

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DUP-01 f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/12/24	Data File:	402092-04.142
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.30
Lead	2.21
Manganese	147

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	I4-100 mb
Date Analyzed:	02/08/24	Data File:	I4-100 mb.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/08/24	Data File:	402092-01.065
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	13.4
Lead	1.15

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	402092-02.198
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.46
Lead	1.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/09/24	Data File:	402092-03.199
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.41
Lead	5.10

Analysis For Total Metals By EPA Method 6020B

Client ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/09/24	Data File:	402092-04.200
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.48
Lead	3.58

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	I4-99 mb
Date Analyzed:	02/08/24	Data File:	I4-99 mb.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-01
Date Analyzed:	02/09/24	Data File:	020911.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	020912.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	3.3
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.1
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	0.37	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-03 1/10
Date Analyzed:	02/09/24	Data File:	020913.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	54
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	91
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	360
Hexane	<50	o-Xylene	140
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	28
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	120
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200 ca	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	350
Benzene	<0.35 j	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	94
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-04 1/10
Date Analyzed:	02/09/24	Data File:	020914.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	55
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	84
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	340
Hexane	<50	o-Xylene	130
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	27
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	120
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200 ca	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	340
Benzene	<0.35 j	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	98
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	04-0311 mb
Date Analyzed:	02/09/24	Data File:	020909.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35 j	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/08/24	Data File:	020818.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86	11	173
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	78 ca	10	140
Terphenyl-d14	77	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	0.028
Pyrene	0.020
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	020906.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	15	144
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	86	10	142
Terphenyl-d14	92	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.58
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/09/24	Data File:	020907.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	15	144
2-Fluorobiphenyl	70	25	128
2,4,6-Tribromophenol	87	10	142
Terphenyl-d14	83	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	37 ve
2-Methylnaphthalene	15
1-Methylnaphthalene	9.1
Acenaphthylene	<0.02
Acenaphthene	0.040
Fluorene	0.061
Phenanthrene	0.042
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03 1/10
Date Analyzed:	02/09/24	Data File:	020917.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74 d	15	144
2-Fluorobiphenyl	68 d	25	128
2,4,6-Tribromophenol	89 d	10	142
Terphenyl-d14	79 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	39

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/09/24	Data File:	020910.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	15	144
2-Fluorobiphenyl	69	25	128
2,4,6-Tribromophenol	90	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	39 ve
2-Methylnaphthalene	15
1-Methylnaphthalene	9.5
Acenaphthylene	<0.02
Acenaphthene	0.040
Fluorene	0.063
Phenanthrene	0.040
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04 1/10
Date Analyzed:	02/09/24	Data File:	020918.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69 d	15	144
2-Fluorobiphenyl	67 d	25	128
2,4,6-Tribromophenol	93 d	10	142
Terphenyl-d14	82 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	42

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	04-0335 mb
Date Analyzed:	02/08/24	Data File:	020811a.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	15	144
2-Fluorobiphenyl	65	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/15/24
Date Analyzed: 02/16/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-19D-W 402092-01	53
MW-20D-W 402092-02	360
MW-21D-W 402092-03	310
DUP-01 402092-04	160
Method Blank I4-0120 MB	<5

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 402099-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	10.8	102 b	98 b	75-125	4 b
Lead	ug/L (ppb)	10	<1	86	87	75-125	1
Manganese	ug/L (ppb)	20	76.4	114 b	106 b	75-125	7 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	86	80-120
Lead	ug/L (ppb)	10	89	80-120
Manganese	ug/L (ppb)	20	88	80-120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	13.4	95 b	97 b	75-125	2 b
Lead	ug/L (ppb)	10	1.15	81	78	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Lead	ug/L (ppb)	10	93	80-120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	93	30-221
Chloromethane	ug/L (ppb)	10	<10	107	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	102	50-150
Bromomethane	ug/L (ppb)	10	<5	101	50-150
Chloroethane	ug/L (ppb)	10	<1	99	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	83	50-150
Acetone	ug/L (ppb)	50	<50	58	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Hexane	ug/L (ppb)	10	<5	110	50-150
Methylene chloride	ug/L (ppb)	10	<5	102	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	101	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	112	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	10-211
Chloroform	ug/L (ppb)	10	<1	95	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	91	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	99	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	98	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	104	50-150
Benzene	ug/L (ppb)	10	<0.35	104	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	95	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	100	50-150
Dibromomethane	ug/L (ppb)	10	<1	103	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	106	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
Toluene	ug/L (ppb)	10	<1	102	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	104	50-150
2-Hexanone	ug/L (ppb)	50	<10	96	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	106	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	104	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	106	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	111	50-150
Chlorobenzene	ug/L (ppb)	10	<1	104	50-150
Ethylbenzene	ug/L (ppb)	10	<1	104	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	<2	101	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	96	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromoform	ug/L (ppb)	10	<5	120	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	107	50-150
Bromobenzene	ug/L (ppb)	10	<1	102	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	103	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	123	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	117	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	105	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	104	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	105	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	102	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	107	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	108	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	105	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	106	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	112	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	107	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	112	50-150
Naphthalene	ug/L (ppb)	10	<1	120	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	118	50-150

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	89	84	46-206	6
Chloromethane	ug/L (ppb)	10	105	99	59-132	6
Vinyl chloride	ug/L (ppb)	10	98	92	64-142	6
Bromomethane	ug/L (ppb)	10	90	88	50-197	2
Chloroethane	ug/L (ppb)	10	96	90	70-130	6
Trichlorofluoromethane	ug/L (ppb)	10	80	84	51-159	5
Acetone	ug/L (ppb)	50	58	52	10-140	11
1,1-Dichloroethene	ug/L (ppb)	10	92	87	64-140	6
Hexane	ug/L (ppb)	10	105	100	54-136	5
Methylene chloride	ug/L (ppb)	10	96	90	43-134	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	93	70-130	5
trans-1,2-Dichloroethene	ug/L (ppb)	10	95	89	70-130	7
1,1-Dichloroethane	ug/L (ppb)	10	97	92	70-130	5
2,2-Dichloropropane	ug/L (ppb)	10	108	97	64-148	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	94	70-130	2
Chloroform	ug/L (ppb)	10	93	86	70-130	8
2-Butanone (MEK)	ug/L (ppb)	50	90	89	47-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	93	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	90	86	70-130	5
1,1-Dichloropropene	ug/L (ppb)	10	93	89	70-130	4
Carbon tetrachloride	ug/L (ppb)	10	103	98	70-130	5
Benzene	ug/L (ppb)	10	100	98	70-130	2
Trichloroethene	ug/L (ppb)	10	91	90	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	92	93	70-130	1
Bromodichloromethane	ug/L (ppb)	10	94	93	70-130	1
Dibromomethane	ug/L (ppb)	10	99	95	70-130	4
4-Methyl-2-pentanone	ug/L (ppb)	50	106	105	68-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	93	95	69-131	2
Toluene	ug/L (ppb)	10	97	93	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	94	90	70-130	4
1,1,2-Trichloroethane	ug/L (ppb)	10	100	97	70-130	3
2-Hexanone	ug/L (ppb)	50	92	86	45-138	7
1,3-Dichloropropane	ug/L (ppb)	10	103	102	70-130	1
Tetrachloroethene	ug/L (ppb)	10	98	94	70-130	4
Dibromochloromethane	ug/L (ppb)	10	102	99	60-148	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	103	70-130	1
Chlorobenzene	ug/L (ppb)	10	97	95	70-130	2
Ethylbenzene	ug/L (ppb)	10	99	94	70-130	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	91	70-130	5
m,p-Xylene	ug/L (ppb)	20	97	92	70-130	5
o-Xylene	ug/L (ppb)	10	93	87	70-130	7
Styrene	ug/L (ppb)	10	93	89	70-130	4
Isopropylbenzene	ug/L (ppb)	10	92	85	70-130	8
Bromoform	ug/L (ppb)	10	115	109	69-138	5
n-Propylbenzene	ug/L (ppb)	10	103	100	70-130	3
Bromobenzene	ug/L (ppb)	10	102	96	70-130	6
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	94	70-130	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	118	113	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	114	109	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	100	95	70-130	5
4-Chlorotoluene	ug/L (ppb)	10	99	96	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	102	98	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	99	94	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	103	98	70-130	5
p-Isopropyltoluene	ug/L (ppb)	10	104	98	70-130	6
1,3-Dichlorobenzene	ug/L (ppb)	10	103	96	70-130	7
1,4-Dichlorobenzene	ug/L (ppb)	10	101	96	70-130	5
1,2-Dichlorobenzene	ug/L (ppb)	10	100	96	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	113	108	70-130	5
1,2,4-Trichlorobenzene	ug/L (ppb)	10	105	96	70-130	9
Hexachlorobutadiene	ug/L (ppb)	10	109	98	70-130	11
Naphthalene	ug/L (ppb)	10	117	107	70-130	9
1,2,3-Trichlorobenzene	ug/L (ppb)	10	110	99	70-130	11

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	66	64	50-104	3
2-Methylnaphthalene	ug/L (ppb)	5	71	69	52-113	3
1-Methylnaphthalene	ug/L (ppb)	5	69	67	51-115	3
Acenaphthylene	ug/L (ppb)	5	80	78	60-114	3
Acenaphthene	ug/L (ppb)	5	77	76	57-110	1
Fluorene	ug/L (ppb)	5	84	84	61-115	0
Phenanthrene	ug/L (ppb)	5	84	86	63-113	2
Anthracene	ug/L (ppb)	5	86	89	65-117	3
Fluoranthene	ug/L (ppb)	5	92	95	68-121	3
Pyrene	ug/L (ppb)	5	88	90	62-133	2
Benz(a)anthracene	ug/L (ppb)	5	89	94	66-131	5
Chrysene	ug/L (ppb)	5	91	95	66-129	4
Benzo(a)pyrene	ug/L (ppb)	5	95	101	66-129	6
Benzo(b)fluoranthene	ug/L (ppb)	5	88	92	55-144	4
Benzo(k)fluoranthene	ug/L (ppb)	5	92	99	58-139	7
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	103	105	62-136	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	99	102	55-146	3
Benzo(g,h,i)perylene	ug/L (ppb)	5	97	100	58-137	3

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	112	112	35-146	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 02/07/24 F3/K4/VW2

402092

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: w + w/o Sgc 2/2/7

Page # 1 of 1

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

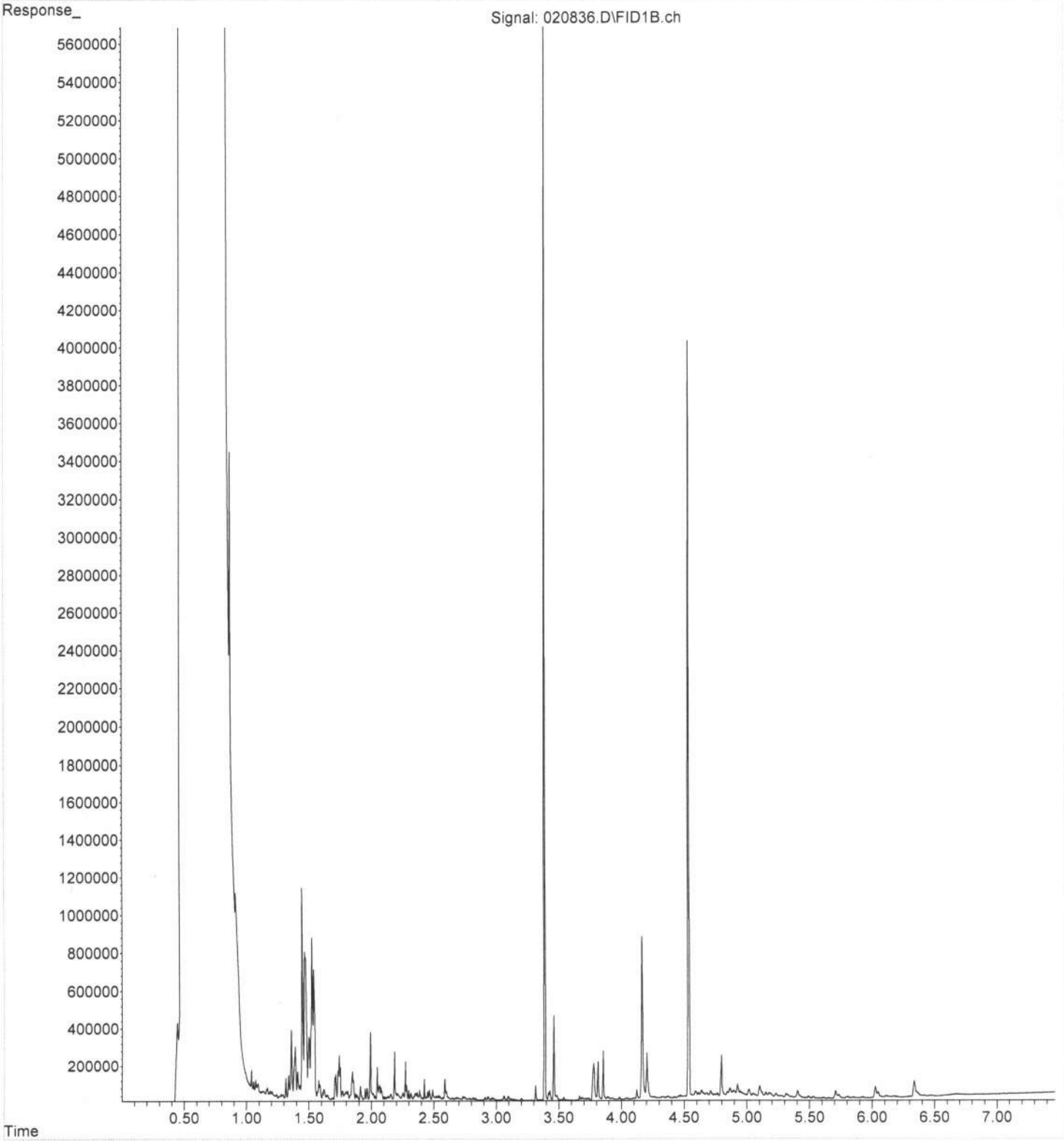
ANALYSES REQUESTED → total & dissolved

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx w/SGC	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	lead & arsenic ~~PCBs EPA 8082~~	TOC	TSS	EDB, EDC, MTBE	Geochem *	Notes
MW-19D-W	01 A-N	2/6/24	1025	W	14	X	X			X	X	X	X	X	X	X	Missing 500mL HCl amber.
MW-20D-W	02 A-O		1425		15												
MW-21D-W	03		1245		15												Provide chromatograms for TPH Analysis for ALL samples
DUP-01	04		1300		15												
Trip Blank AP 02/07	05 A-B	—	—	water	2												anions: *Nitrate, nitrite, chloride, sulfate, Ammonia
							Samples received at 2 °C										alkalinity
																	Sulfide methane, ethene, ethane
																	dissolved ferrous manganese

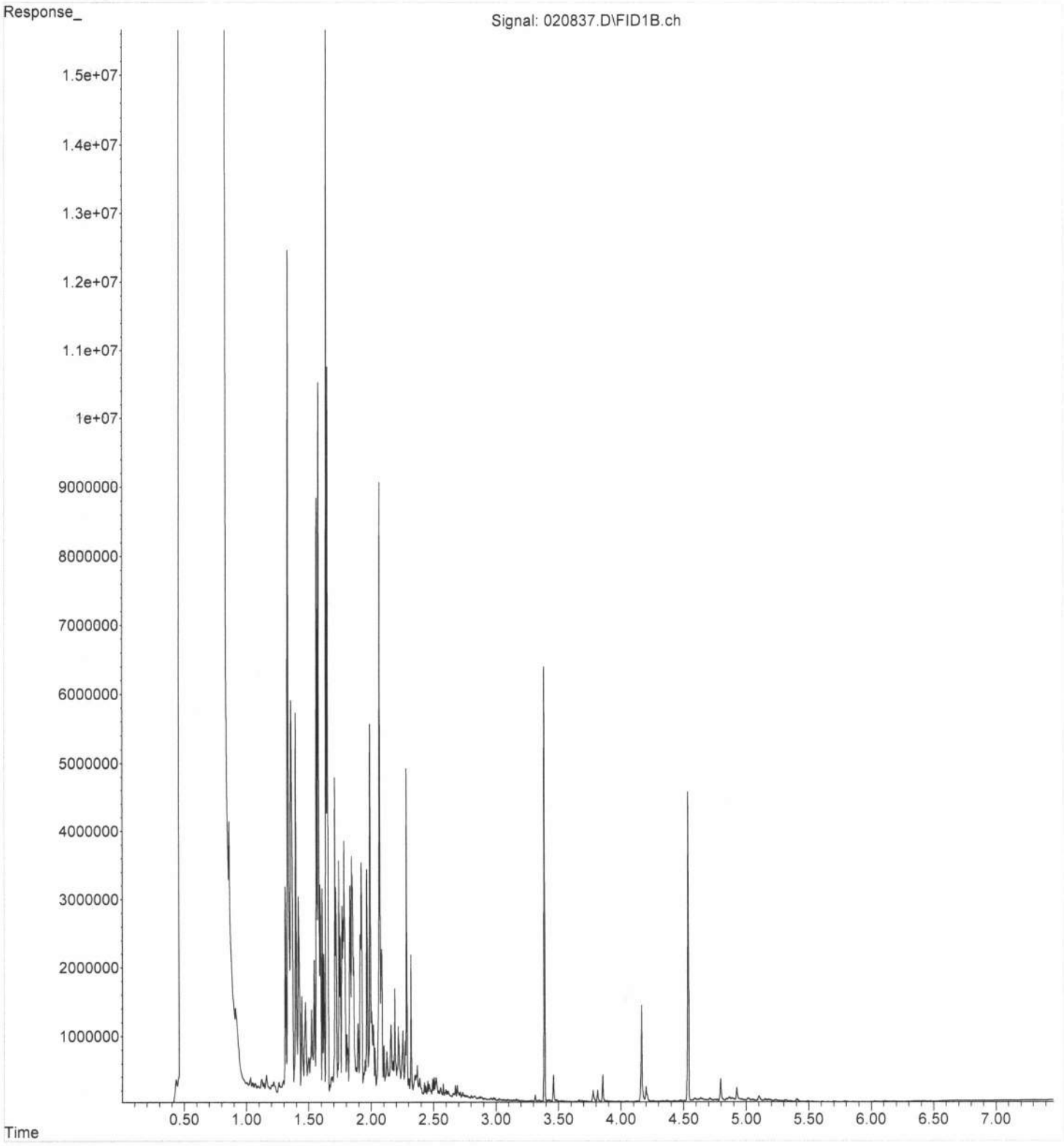
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/6/24	1105
Received by:	Ben Jones	FedEx	2/7/24	1105
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

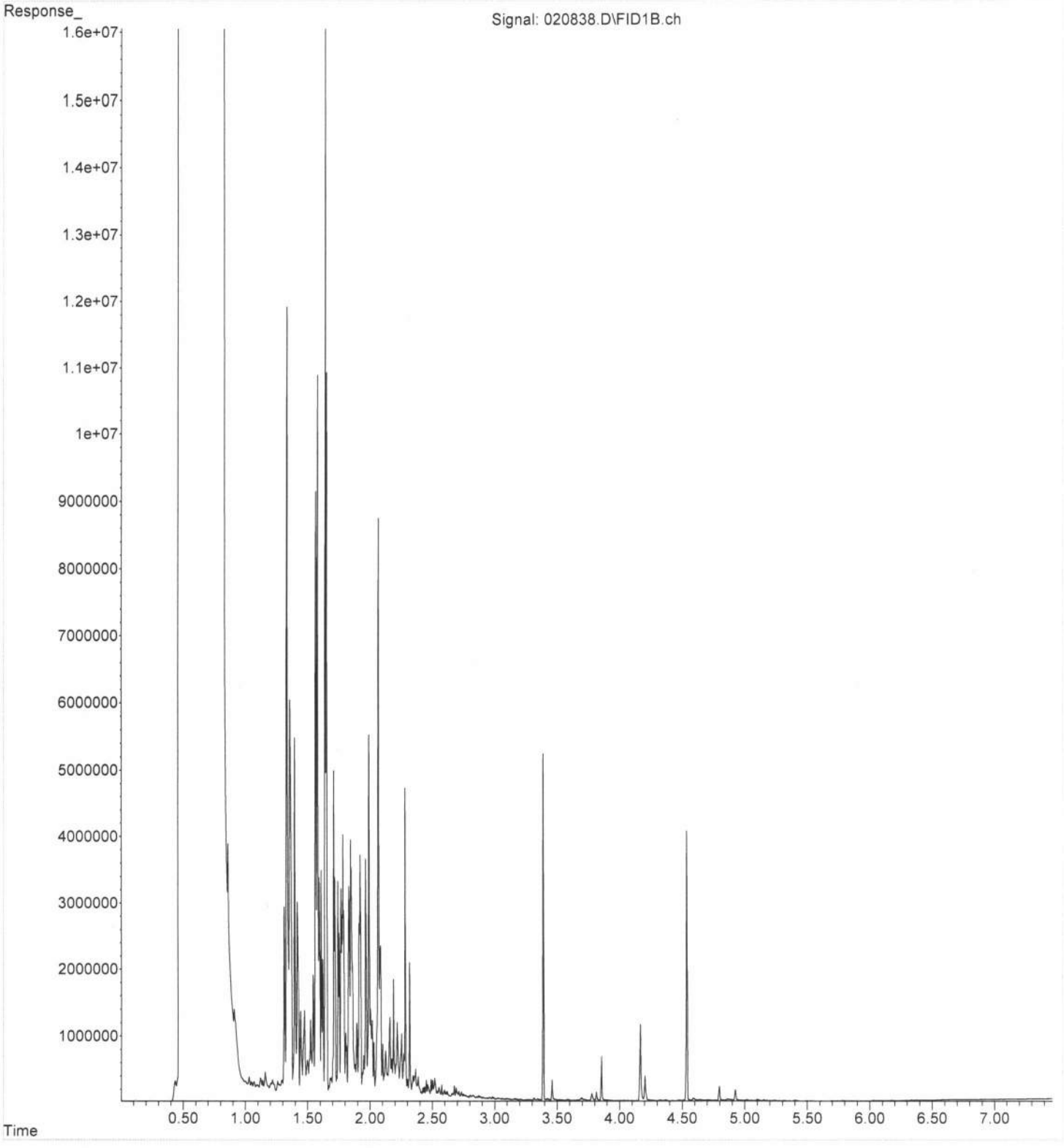
File :P:\Proc_GC14\02-08-24\020836.D
Operator : TL
Acquired : 08 Feb 2024 07:26 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-02
Misc Info : ERR
Vial Number: 29



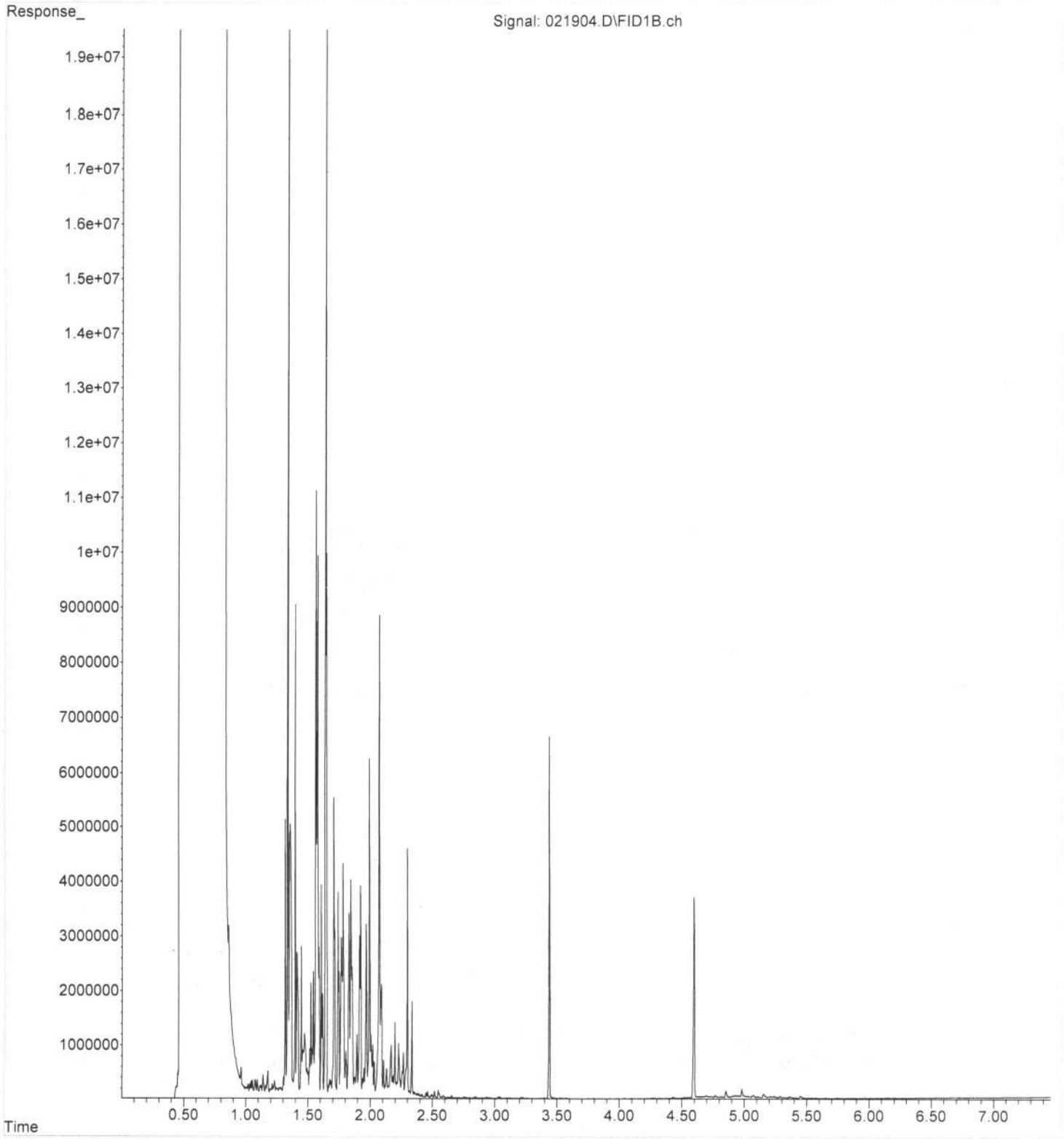
File :P:\Proc_GC14\02-08-24\020837.D
Operator : TL
Acquired : 08 Feb 2024 07:38 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-03
Misc Info : ERR
Vial Number: 30



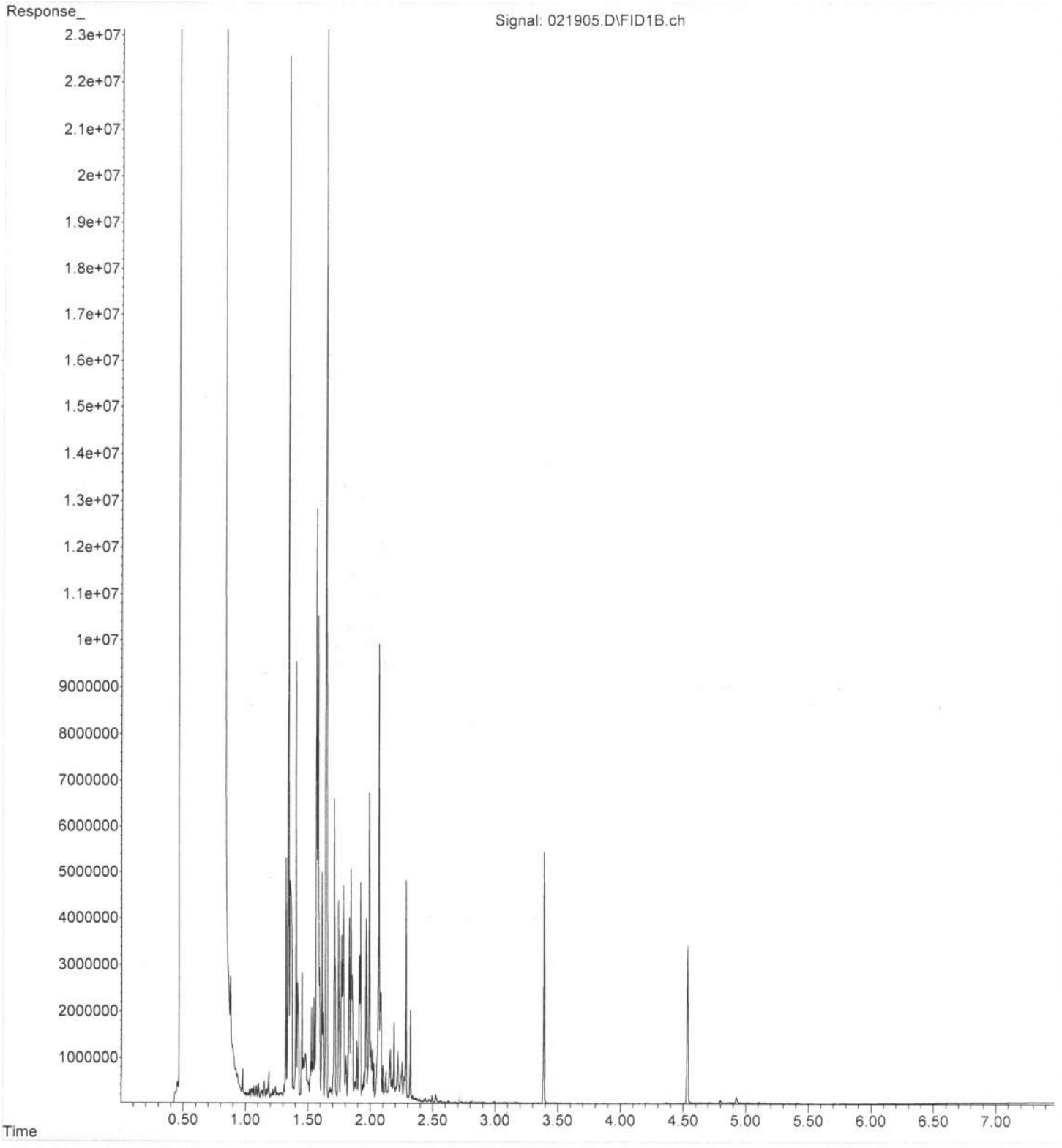
File :P:\Proc_GC14\02-08-24\020838.D
Operator : TL
Acquired : 08 Feb 2024 07:50 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-04
Misc Info : ERR
Vial Number: 31



File :P:\Proc_GC14\02-19-24\021904.D
Operator : TL
Acquired : 19 Feb 2024 08:57 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-03 sg rr
Misc Info : ERR
Vial Number: 6



File :P:\Proc_GC14\02-19-24\021905.D
Operator : TL
Acquired : 19 Feb 2024 09:08 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-04 sg rr
Misc Info : ERR
Vial Number: 7



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402092
Work Order Number: 2402100

February 14, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 2/7/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/14/2024*

CLIENT: Friedman & Bruya
Project: 402092
Work Order: 2402100

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402100-001	MW-19D-W	02/06/2024 10:25 AM	02/07/2024 12:10 PM
2402100-002	MW-20D-W	02/06/2024 2:25 PM	02/07/2024 12:10 PM
2402100-003	MW-21D-W	02/06/2024 12:45 PM	02/07/2024 12:10 PM
2402100-004	DUP-01	02/06/2024 1:00 PM	02/07/2024 12:10 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402100**
Date: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402100**
Date Reported: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-001 **Collection Date:** 2/6/2024 10:25:00 AM
Client Sample ID: **MW-19D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	0.0595	0.00675		mg/L	1	2/13/2024 10:01:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:01:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:01:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	34.8	2.40	D	mg/L	20	2/8/2024 2:44:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 8:43:00 PM
Nitrate (as N)	38.9	2.00	DH	mg/L	20	2/8/2024 2:44:00 PM
Nitrate (as N)	34.7	0.500	DE	mg/L	5	2/7/2024 8:43:00 PM
Sulfate	27.6	3.00	D	mg/L	5	2/7/2024 8:43:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.80	0.700		mg/L	1	2/9/2024 11:35:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	118	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:52:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.205	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-002 **Collection Date:** 2/6/2024 2:25:00 PM
Client Sample ID: **MW-20D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	0.0142	0.00675		mg/L	1	2/13/2024 10:03:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:03:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:03:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	7.94	0.600	D	mg/L	5	2/7/2024 9:06:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:06:00 PM
Nitrate (as N)	1.30	0.500	D	mg/L	5	2/7/2024 9:06:00 PM
Sulfate	9.69	3.00	D	mg/L	5	2/7/2024 9:06:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.62	0.700		mg/L	1	2/10/2024 12:39:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	170	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:07:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.247	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Analytical Report

Work Order: **2402100**
Date Reported: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-003 **Collection Date:** 2/6/2024 12:45:00 PM
Client Sample ID: **MW-21D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/13/2024 10:05:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:05:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:05:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	52.4	2.40	D	mg/L	20	2/8/2024 3:07:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:29:00 PM
Nitrate (as N)	1.37	0.500	D	mg/L	5	2/7/2024 9:29:00 PM
Sulfate	7.48	3.00	D	mg/L	5	2/7/2024 9:29:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	2.14	0.700		mg/L	1	2/10/2024 1:12:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	135	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:12:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.207	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-004 **Collection Date:** 2/6/2024 1:00:00 PM
Client Sample ID: **DUP-01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/13/2024 10:09:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:09:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:09:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	51.9	2.40	D	mg/L	20	2/8/2024 3:30:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:52:00 PM
Nitrate (as N)	1.37	0.500	D	mg/L	5	2/7/2024 9:52:00 PM
Sulfate	7.46	3.00	D	mg/L	5	2/7/2024 9:52:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	2.23	0.700		mg/L	1	2/10/2024 1:43:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	138	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:34:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.151	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89603**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **MBLKW**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870587**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89603**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **LCSW**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870588**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103	2.50	100.0	0	103	86.2	126.2				

Sample ID: **2402100-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **MW-19D-W**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870590**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	112	2.50						117.9	5.26	20	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **MBLKW**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869931**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **LCSW**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869932**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869934**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869935**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869936**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42857**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **MBLKW**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868986**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42857**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **LCSW**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868987**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.778	0.120	0.7500	0	104	90	110				
Nitrite (as N)	0.769	0.120	0.7500	0	103	90	110				
Nitrate (as N)	0.794	0.100	0.7500	0	106	90	110				
Sulfate	3.89	0.600	3.750	0	104	90	110				

Sample ID: **2402039-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **BATCH**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868994**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	54.3	2.40						56.26	3.51	20	D
Nitrite (as N)	ND	2.40						0		20	D
Nitrate (as N)	ND	2.00						0		20	D
Sulfate	ND	12.0						0		20	D

Sample ID: **2402039-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **BATCH**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.7	2.40	15.00	56.26	89.7	80	120				D
Nitrite (as N)	14.9	2.40	15.00	0	99.3	80	120				D
Nitrate (as N)	15.6	2.00	15.00	0.4400	101	80	120				D

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2402039-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/7/2024** RunNo: **89527**
Client ID: **BATCH** Batch ID: **42857** Analysis Date: **2/7/2024** SeqNo: **1868995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	81.1	12.0	75.00	6.240	99.8	80	120				D

Sample ID: **2402039-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/7/2024** RunNo: **89527**
Client ID: **BATCH** Batch ID: **42857** Analysis Date: **2/7/2024** SeqNo: **1868996**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	71.5	2.40	15.00	56.26	102	80	120	69.72	2.52	20	D
Nitrite (as N)	15.4	2.40	15.00	0	103	80	120	14.90	3.56	20	D
Nitrate (as N)	16.1	2.00	15.00	0.4400	104	80	120	15.56	3.16	20	D
Sulfate	84.3	12.0	75.00	6.240	104	80	120	81.06	3.90	20	D

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2402100-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/9/2024**		RunNo: **89535**		
Client ID: **MW-19D-W**	Batch ID: **R89535**					Analysis Date: **2/9/2024**		SeqNo: **1869477**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/10/2024**		RunNo: **89535**		
Client ID: **MW-19D-W**	Batch ID: **R89535**					Analysis Date: **2/10/2024**		SeqNo: **1869438**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89609**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **LCSW**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,070	0.00675	1,000	0	107	73.6	124				
Ethene	1,040	0.0146	1,000	0	104	76.3	122				
Ethane	1,060	0.0151	1,000	0	106	76.1	123				

Sample ID: **MB-R89609**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **MBLKW**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-007DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **BATCH**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870653**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	6.50	0.00675						5.420	18.1	30	E
Ethene	0.116	0.0146						0	200	30	
Ethane	0.153	0.0151						0	200	30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402100
Logged by:	Morgan Wilson	Date Received:	2/7/2024 12:10:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ H2SO4
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402100

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
402092	D-668

REMARKS

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate Nitrite	Sulfate	Ammonia	Chloride	Sulfide	Alkalinity	Dissolved RSK Gasses	TOC				Notes
MW-19D-W		2/6/24	1025	W	7	X	←				→	X	X				
MW-20D-W			1425	W	7	X	←				→	X	X				
MW-21D-W			1245	W	7	X	←				→	X	X				
DUP-01			1300	W	7	X	←				→	X	X				
~~Trip Blank~~	~~EP~~	N															

Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	~~Michael Erdahl~~ Eric Sauer	Friedman & Bruya	2/7/24	1130
Seattle, WA 98119-2029	Received by:	Nathan Hoffer	FAI	2/7/24	1210
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 21, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 1, 2024 from the Whidbey Marine 0204475-001, F&BI 402019 project. There are 31 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0221R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 1, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402019 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402019 -01	HA-4-S1
402019 -02	HA-4-S2
402019 -03	HA-4-S3
402019 -04	HA-4-S4
402019 -05	HA-4-S5
402019 -06	HA-4-S6

Samples HA-4-S2, HA-4-S4, and HA-4-S6 were sent to Fremont Analytical for total organic carbon analysis. In addition, sample HA-4-S4 was sent to Fremont for EPH and VPH analyses. The reports are enclosed.

The 8260D acetone calibration standard did not meet the acceptance criteria. The data were flagged accordingly.

The 8270E calibration standard failed the acceptance criteria for nitrobenzene-d5 surrogate. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: NA
Date Analyzed: 02/02/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-4-S1 402019-01	3
HA-4-S2 402019-02	5
HA-4-S3 402019-03	8
HA-4-S4 402019-04	12
HA-4-S5 402019-05	7
HA-4-S6 402019-06	15

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/05/24
Date Analyzed: 02/05/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-4-S1 402019-01	<5	134
HA-4-S2 402019-02	<5	134
HA-4-S3 402019-03	<5	133
HA-4-S4 402019-04 1/10	700	183
HA-4-S6 402019-06	9.1	140
Method Blank 04-199 MB	<5	132

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/05/24
Date Analyzed: 02/05/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-4-S5 402019-05	<0.02	<0.02	<0.02	<0.06	<5	115
Method Blank 04-199 MB	<0.02	<0.02	<0.02	<0.06	<5	116

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/02/24
Date Analyzed: 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-4-S1 402019-01	<50	<250	90
HA-4-S2 402019-02	<50	<250	88
HA-4-S3 402019-03	<50	<250	87
HA-4-S4 402019-04	<50	<250	90
HA-4-S5 402019-05	<50	<250	88
HA-4-S6 402019-06	<50	<250	87
Method Blank 04-291 MB	<50	<250	93

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-01
Date Analyzed:	02/02/24	Data File:	402019-01.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.57
Lead	2.92

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-02
Date Analyzed:	02/02/24	Data File:	402019-02.096
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.26

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-03
Date Analyzed:	02/02/24	Data File:	402019-03.097
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.30
Lead	1.78

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-04
Date Analyzed:	02/02/24	Data File:	402019-04.098
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.26
Lead	1.26

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-06
Date Analyzed:	02/02/24	Data File:	402019-06.099
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.98
Lead	1.97

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	I4-80 mb2
Date Analyzed:	02/02/24	Data File:	I4-80 mb2.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-01 1/0.5
Date Analyzed:	02/06/24	Data File:	020619.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-02 1/0.5
Date Analyzed:	02/06/24	Data File:	020620.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	105	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-03 1/0.5
Date Analyzed:	02/06/24	Data File:	020621.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0024
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.018
Hexane	<0.25	o-Xylene	0.0040
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	0.0014	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.012	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-04 1/0.5
Date Analyzed:	02/06/24	Data File:	020622.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	84	120
Toluene-d8	110	73	128
4-Bromofluorobenzene	119	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0098
Hexane	2.8	o-Xylene	0.0013
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	0.068
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.26
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.18
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.33
Benzene	<0.001	sec-Butylbenzene	0.49
Trichloroethene	<0.002	p-Isopropyltoluene	0.21
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0046	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S5	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-05 1/0.5
Date Analyzed:	02/06/24	Data File:	020623.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	84	120
Toluene-d8	100	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-06 1/0.5
Date Analyzed:	02/06/24	Data File:	020624.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	84	120
Toluene-d8	104	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.52
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	2.1
Hexane	<0.25	o-Xylene	0.80
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.11
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.18
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.75
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.036	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.36
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	04-0280 mb 1/0.5
Date Analyzed:	02/06/24	Data File:	020606.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-01 1/5
Date Analyzed:	02/05/24	Data File:	020435.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	83	10	198
2-Fluorobiphenyl	87	45	117
2,4,6-Tribromophenol	72	11	158
Terphenyl-d14	101	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-02 1/5
Date Analyzed:	02/04/24	Data File:	020408.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	83 ca	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	66	17	154
Terphenyl-d14	84	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-03 1/5
Date Analyzed:	02/04/24	Data File:	020409.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	92 ca	16	137
2-Fluorobiphenyl	87	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	88	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-04 1/5
Date Analyzed:	02/04/24	Data File:	020410.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104 ca	16	137
2-Fluorobiphenyl	92	46	122
2,4,6-Tribromophenol	75	17	154
Terphenyl-d14	86	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	0.15
1-Methylnaphthalene	0.065
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.044
Anthracene	0.030
Fluoranthene	0.013
Pyrene	0.026
Benz(a)anthracene	0.027
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-06 1/5
Date Analyzed:	02/04/24	Data File:	020412.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	96 ca	16	137
2-Fluorobiphenyl	92	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	87	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.024
2-Methylnaphthalene	0.026
1-Methylnaphthalene	0.011
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	04-0292 mb 1/5
Date Analyzed:	02/05/24	Data File:	020434.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	91	10	198
2-Fluorobiphenyl	97	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	105	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402019-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	96	70-130
Toluene	mg/kg (ppm)	1.0	95	70-130
Ethylbenzene	mg/kg (ppm)	1.0	100	70-130
Xylenes	mg/kg (ppm)	3.0	103	70-130
Gasoline	mg/kg (ppm)	40	110	70-130

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 402028-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	2,100	88	92	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	77-123

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402008-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	102	99	75-125	3
Lead	mg/kg (ppm)	50	<5	104	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Lead	mg/kg (ppm)	50	98	80-120

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401389-42 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	39	38	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	75	73	10-126	3
Vinyl chloride	mg/kg (ppm)	2	<0.05	72	66	10-138	9
Bromomethane	mg/kg (ppm)	2	<0.5	60	55	10-163	9
Chloroethane	mg/kg (ppm)	2	<0.5	61	52	10-176	16
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	65	60	10-176	8
Acetone	mg/kg (ppm)	10	<5	74	68	10-163	8
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	75	71	10-160	5
Hexane	mg/kg (ppm)	2	<0.25	69	66	10-137	4
Methylene chloride	mg/kg (ppm)	2	<0.5	70	66	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	84	79	21-145	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	75	72	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	81	75	19-140	8
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	84	78	10-158	7
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	75	74	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	78	75	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	10	<1	78	71	19-147	9
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	83	78	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	78	73	10-156	7
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	76	74	17-140	3
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	80	74	9-164	8
Benzene	mg/kg (ppm)	2	<0.03	78	73	29-129	7
Trichloroethene	mg/kg (ppm)	2	<0.02	76	73	21-139	4
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	81	77	30-135	5
Bromodichloromethane	mg/kg (ppm)	2	<0.05	79	79	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	74	70	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	82	80	24-155	2
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	84	78	28-144	7
Toluene	mg/kg (ppm)	2	<0.05	80	79	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	87	84	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	85	88	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	79	83	15-166	5
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	88	85	31-137	3
Tetrachloroethene	mg/kg (ppm)	2	<0.025	80	80	20-133	0
Dibromochloromethane	mg/kg (ppm)	2	<0.05	83	82	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	83	81	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	80	79	32-129	1
Ethylbenzene	mg/kg (ppm)	2	0.034	83	82	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	83	82	31-143	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	81	81	34-136	0
o-Xylene	mg/kg (ppm)	2	<0.05	81	79	33-134	2
Styrene	mg/kg (ppm)	2	<0.05	80	80	35-137	0
Isopropylbenzene	mg/kg (ppm)	2	<0.05	81	79	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	87	85	21-156	2
n-Propylbenzene	mg/kg (ppm)	2	0.043	86	83	23-146	4
Bromobenzene	mg/kg (ppm)	2	<0.05	86	81	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	86	83	18-149	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	87	85	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	91	87	25-144	4
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	85	83	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	84	82	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	85	82	30-137	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	0.038	86	83	10-182	4
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	89	84	23-145	6
p-Isopropyltoluene	mg/kg (ppm)	2	0.83	91 b	88 b	21-149	3 b
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	80	78	30-131	3
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	84	80	29-129	5
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	83	79	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	85	86	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	82	80	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	98	97	10-142	1
Naphthalene	mg/kg (ppm)	2	0.088	84	81	14-157	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	85	82	20-144	4

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	104	27-133
Vinyl chloride	mg/kg (ppm)	2	91	22-139
Bromomethane	mg/kg (ppm)	2	70	10-201
Chloroethane	mg/kg (ppm)	2	67	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	87	10-196
Acetone	mg/kg (ppm)	10	89	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	94	47-128
Hexane	mg/kg (ppm)	2	100	43-142
Methylene chloride	mg/kg (ppm)	2	91	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	96	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	92	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	95	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	91	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	92	64-135
Chloroform	mg/kg (ppm)	2	95	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	97	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	91	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	95	64-136
Carbon tetrachloride	mg/kg (ppm)	2	95	60-139
Benzene	mg/kg (ppm)	2	93	65-136
Trichloroethene	mg/kg (ppm)	2	90	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	95	61-145
Bromodichloromethane	mg/kg (ppm)	2	96	57-126
Dibromomethane	mg/kg (ppm)	2	89	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	98	65-143
Toluene	mg/kg (ppm)	2	99	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	102	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	106	62-131
2-Hexanone	mg/kg (ppm)	10	106	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	106	67-128
Tetrachloroethene	mg/kg (ppm)	2	99	68-128
Dibromochloromethane	mg/kg (ppm)	2	103	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	105	66-129
Chlorobenzene	mg/kg (ppm)	2	99	67-128
Ethylbenzene	mg/kg (ppm)	2	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	99	64-121
m,p-Xylene	mg/kg (ppm)	4	100	68-128
o-Xylene	mg/kg (ppm)	2	97	67-129
Styrene	mg/kg (ppm)	2	102	67-129
Isopropylbenzene	mg/kg (ppm)	2	99	68-128
Bromoform	mg/kg (ppm)	2	106	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	110	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	108	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	109	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	118	61-137
2-Chlorotoluene	mg/kg (ppm)	2	105	69-128
4-Chlorotoluene	mg/kg (ppm)	2	107	67-127
tert-Butylbenzene	mg/kg (ppm)	2	104	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	107	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	108	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	102	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	107	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	106	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	113	50-153
Naphthalene	mg/kg (ppm)	2	105	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	106	61-126

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 402019-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	81	81	28-125	0
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	85	83	10-192	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	81	79	10-163	2
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	88	86	45-128	2
Acenaphthene	mg/kg (ppm)	0.83	<0.01	87	85	36-125	2
Fluorene	mg/kg (ppm)	0.83	<0.01	90	87	48-121	3
Phenanthrene	mg/kg (ppm)	0.83	<0.01	91	87	46-122	4
Anthracene	mg/kg (ppm)	0.83	<0.01	92	89	30-144	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	98	93	50-150	5
Pyrene	mg/kg (ppm)	0.83	<0.01	91	91	40-134	0
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	92	92	50-150	0
Chrysene	mg/kg (ppm)	0.83	<0.01	96	95	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	98	98	50-150	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	92	94	50-150	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	100	98	50-150	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	101	99	40-140	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	99	96	41-136	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	96	94	29-139	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	85	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	87	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	82	63-113
Acenaphthylene	mg/kg (ppm)	0.83	89	70-130
Acenaphthene	mg/kg (ppm)	0.83	88	66-112
Fluorene	mg/kg (ppm)	0.83	90	67-117
Phenanthrene	mg/kg (ppm)	0.83	91	70-130
Anthracene	mg/kg (ppm)	0.83	93	70-130
Fluoranthene	mg/kg (ppm)	0.83	97	70-130
Pyrene	mg/kg (ppm)	0.83	91	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	94	70-130
Chrysene	mg/kg (ppm)	0.83	96	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	100	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	95	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	99	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	104	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	103	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	65-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402019

SAMPLE CHAIN OF CUSTODY

02/01/24

B2 / N2

Page # 1 of 1

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ✓ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

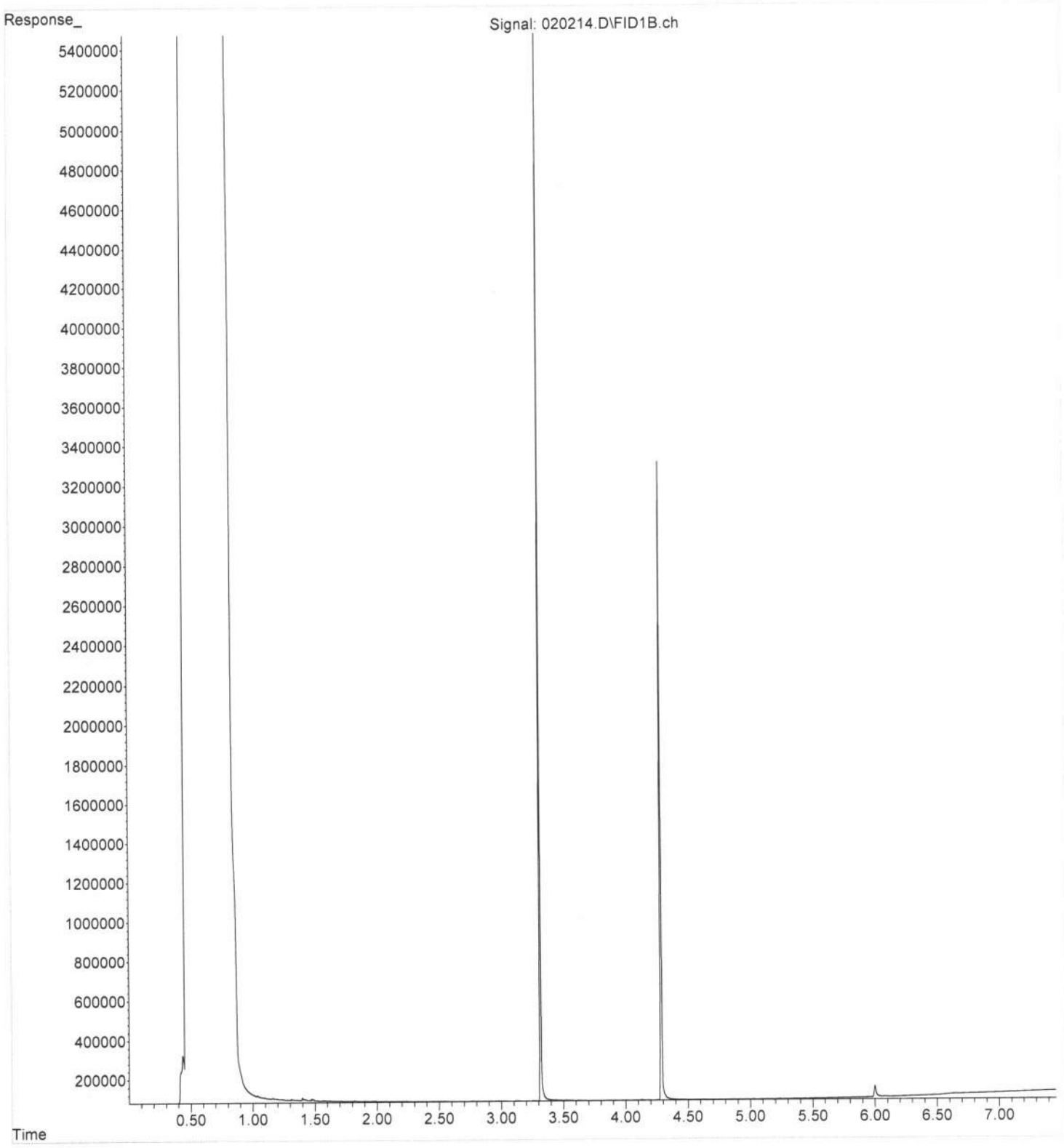
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	EPH and VPH NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB, EDC, MTBE	Lead, Arsenic	TOC	cVOCs	Notes
HA-4-S1	01 A-F	1/29/24	1110	S	6	X	X			X	X		X	X			~~Hold for~~
HA-4-S2	02		1130			X	X			X	X		X	X	X		~~analyses.~~
HA-4-S3	03		1340			X	X			X	X		X	X			~~PM to reach~~
HA-4-S4	04		1350			X	X		A	X	X		X	X	X		~~out.~~
HA-4-S5	05		1400			X	X	X								X	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-4-S6	06 ✓	↓	1600	↓	↓	X	X			X	X		X	X	X		

A-per HG 02/06/24 ME

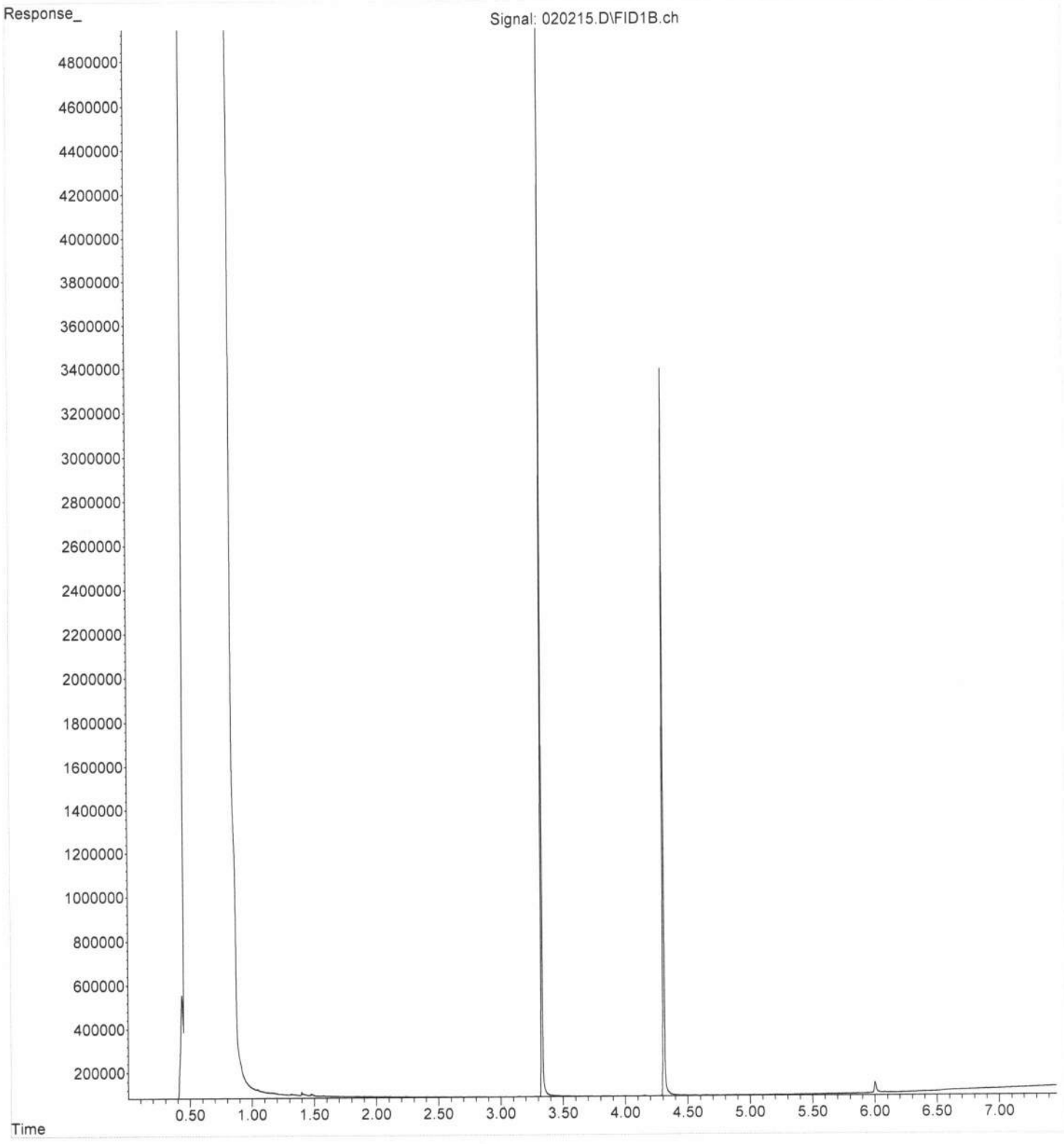
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/1/24	1517
Received by:	Nhan Phan	FEBI	2/1/24	1517
Relinquished by:				
Received by:		Samples received at 1 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

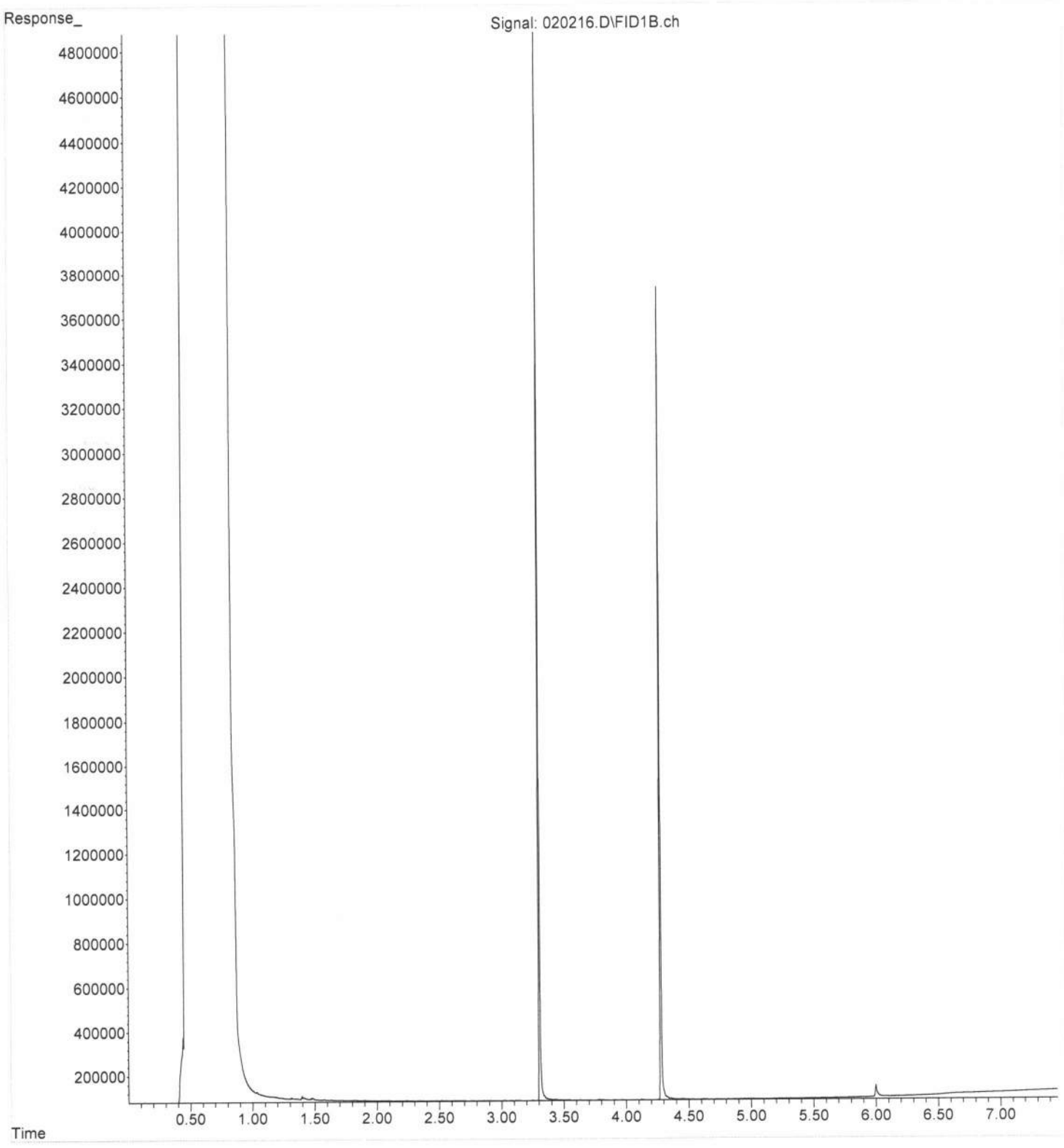
File :P:\Proc_GC10\02-02-24\020214.D
Operator : IJL
Acquired : 02 Feb 2024 11:43 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-01
Misc Info :
Vial Number: 14



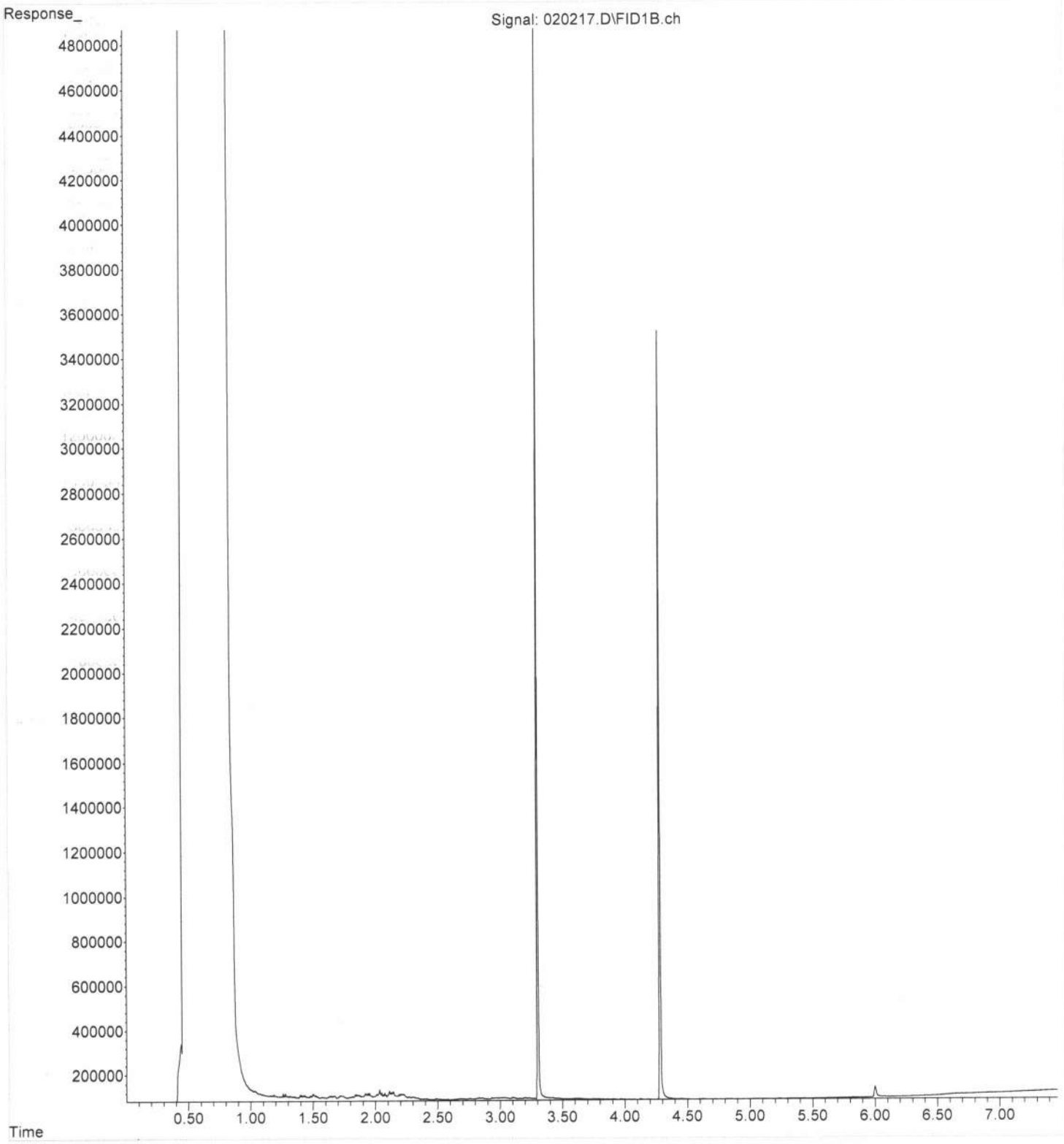
File :P:\Proc_GC10\02-02-24\020215.D
Operator : IJL
Acquired : 02 Feb 2024 11:55 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-02
Misc Info :
Vial Number: 15



File :P:\Proc_GC10\02-02-24\020216.D
Operator : IJL
Acquired : 02 Feb 2024 12:07 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-03
Misc Info :
Vial Number: 16



File :P:\Proc_GC10\02-02-24\020217.D
Operator : IJL
Acquired : 02 Feb 2024 12:18 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-04
Misc Info :
Vial Number: 17



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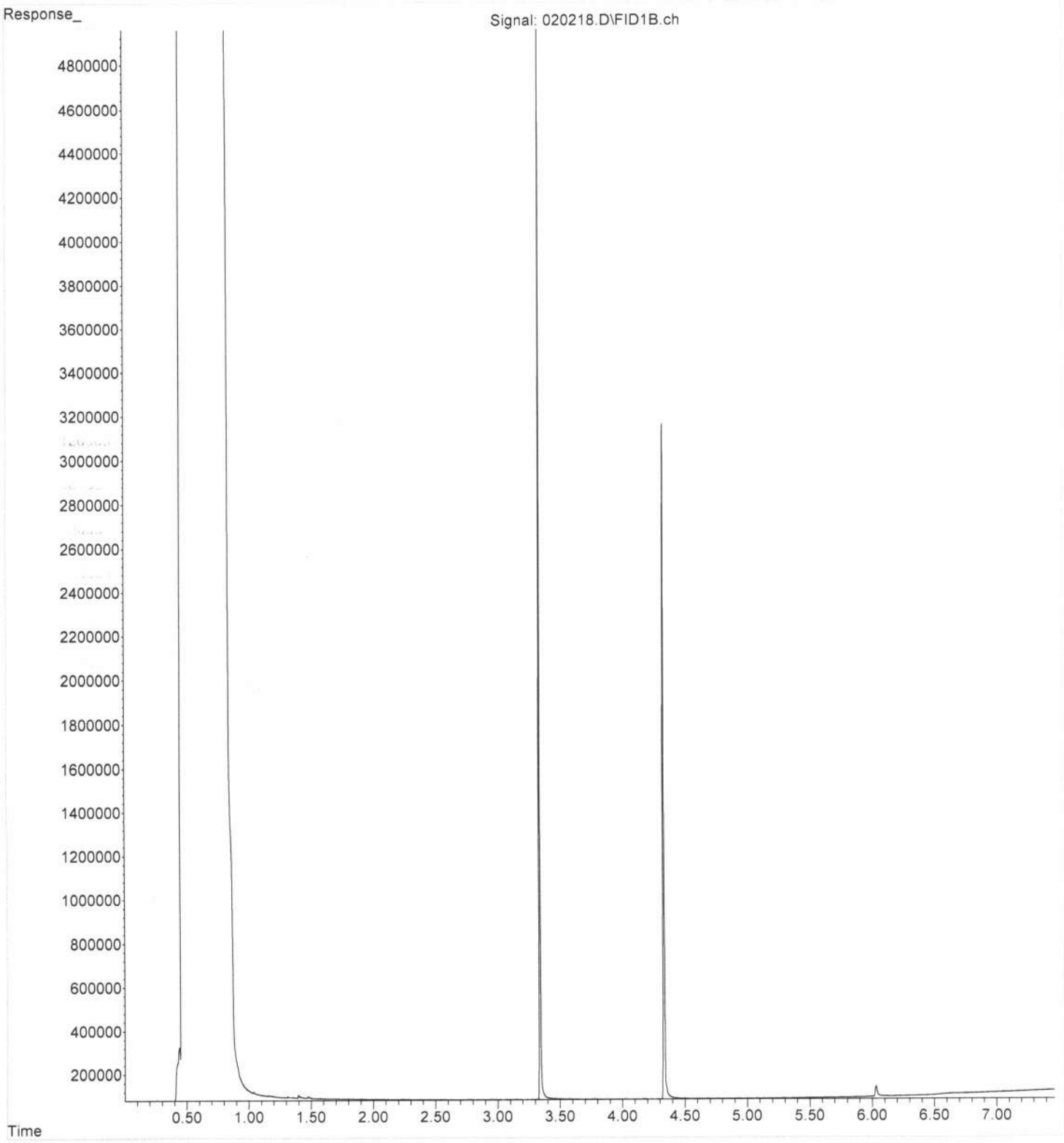
Operator : IJL
Acquired : 02 Feb 2024 12:30 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-05
Misc Info :
Vial Number: 18



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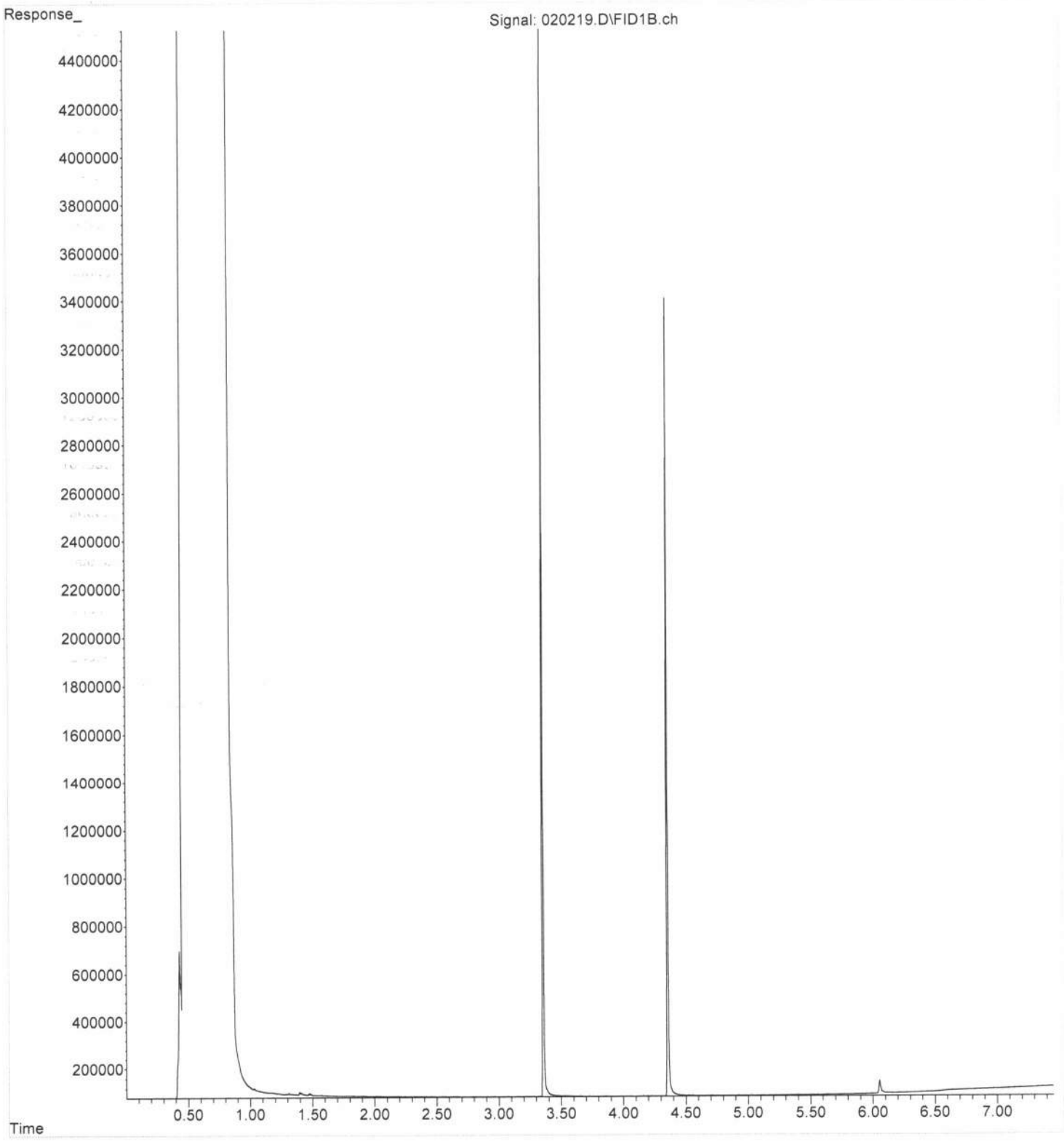
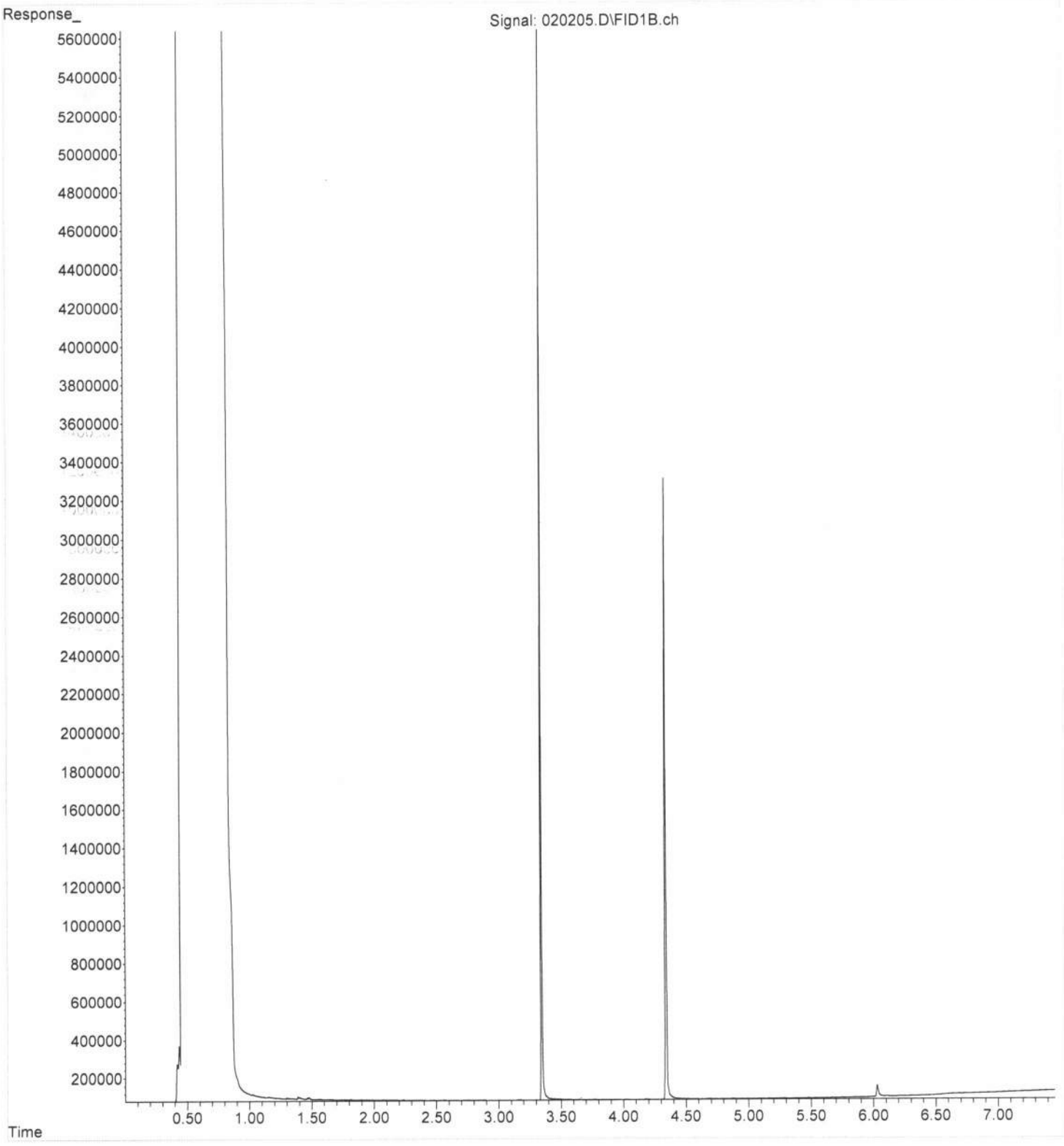
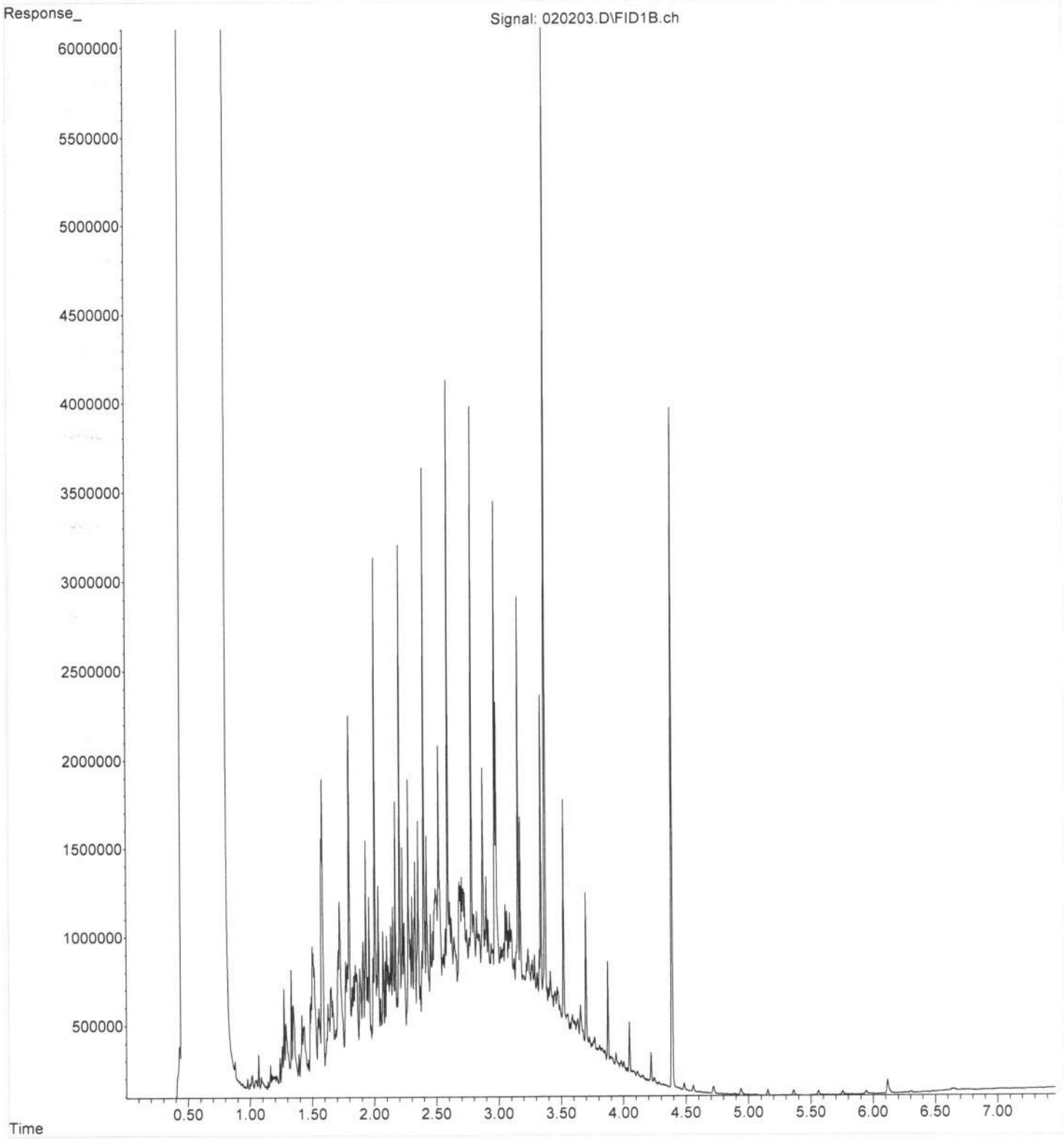
Operator : IJL
Acquired : 02 Feb 2024 12:42 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-06
Misc Info :
Vial Number: 19



File :P:\Proc_GC10\02-02-24\020205.D
Operator : IJL
Acquired : 02 Feb 2024 10:00 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 04-291 mb
Misc Info :
Vial Number: 7



File :P:\Proc_GC10\02-02-24\020203.D
Operator : IJL
Acquired : 02 Feb 2024 09:02 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 500 DX 70-26F
Misc Info :
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402019
Work Order Number: 2402086

February 20, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 2/6/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/20/2024*

CLIENT: Friedman & Bruya
Project: 402019
Work Order: 2402086

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402086-001	HA-4-S4	01/29/2024 1:50 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2402086**
Date: **2/20/2024**

CLIENT: Friedman & Bruya
Project: 402019

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402086**
Date Reported: **2/20/2024**

CLIENT: Friedman & Bruya
Project: 402019

Lab ID: 2402086-001 **Collection Date:** 1/29/2024 1:50:00 PM
Client Sample ID: **HA-4-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42874		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C10-C12)	15.9	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C12-C16)	17.3	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C8-C10)	ND	21.9		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C12-C16)	30.1	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C16-C21)	20.9	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Surr: 1-Chlorooctadecane	66.6	50 - 150		%Rec	1	2/12/2024 2:32:59 PM
Surr: o-Terphenyl	84.5	50 - 150		%Rec	1	2/12/2024 2:32:59 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	2.22	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C6-C8)	16.2	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C8-C10)	37.1	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C10-C12)	36.0	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C8-C10)	17.0	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C10-C12)	28.6	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C12-C13)	16.8	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Surr: 2,5-dibromotoluene	99.4	60 - 140		%Rec	1	2/7/2024 4:53:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R89488		Analyst: BS
Percent Moisture	12.8	0.500		wt%	1	2/8/2024 9:59:29 AM

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42874**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89581**	
Client ID: **MBLKS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870044**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	65.5		100.0		65.5	50	150				

Sample ID: **MB-42874**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89582**	
Client ID: **MBLKS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870052**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	93.8		100.0		93.8	50	150				

Sample ID: **LCS-42874**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89581**	
Client ID: **LCSS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870045**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	105	20.0	250.0	0	42.1	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	68.7	10.0	125.0	0	55.0	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	77.6	10.0	125.0	0	62.1	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	85.8	10.0	125.0	0	68.7	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	97.2	10.0	125.0	0	77.7	36.6	144				
Surr: 1-Chlorooctadecane	70.4		100.0		70.4	50	150				

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42874**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/8/2024**	RunNo: **89582**
Client ID: **LCSS**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870053**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	136	20.0	250.0	0	54.2	18.6	130				
Aromatic Hydrocarbon (C10-C12)	93.2	10.0	125.0	0	74.5	42.7	105				
Aromatic Hydrocarbon (C12-C16)	109	10.0	125.0	0	87.0	43.6	124				
Aromatic Hydrocarbon (C16-C21)	123	10.0	125.0	0	98.5	49.5	124				
Aromatic Hydrocarbon (C21-C34)	107	10.0	125.0	0	85.3	54.8	124				
Surr: o-Terphenyl	89.2		100.0		89.2	50	150				

Sample ID: **2402128-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/8/2024**	RunNo: **89581**
Client ID: **BATCH**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870048**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	91.9	22.5	280.7	14.63	27.5	6.01	130				
Aliphatic Hydrocarbon (C10-C12)	106	11.2	140.4	65.65	28.8	11.6	127				
Aliphatic Hydrocarbon (C12-C16)	231	11.2	140.4	234.0	-1.96	24.7	129				S
Aliphatic Hydrocarbon (C16-C21)	191	11.2	140.4	166.5	17.6	25.5	132				S
Aliphatic Hydrocarbon (C21-C34)	165	11.2	140.4	98.08	47.7	21.4	138				
Surr: 1-Chlorooctadecane	61.0		112.3		54.4	50	150				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2402128-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/8/2024**	RunNo: **89582**
Client ID: **BATCH**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870056**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	122	22.5	280.7	8.000	40.6	12.6	130				
Aromatic Hydrocarbon (C10-C12)	110	11.2	140.4	34.34	53.6	26.3	130				
Aromatic Hydrocarbon (C12-C16)	178	11.2	140.4	112.0	46.8	23.3	139				
Aromatic Hydrocarbon (C16-C21)	211	11.2	140.4	174.1	26.5	32.2	131				S
Aromatic Hydrocarbon (C21-C34)	146	11.2	140.4	106.0	28.8	35.8	139				S
Surr: o-Terphenyl	75.6		112.3		67.3	50	150				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2402128-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/8/2024** RunNo: **89581**
Client ID: **BATCH** Batch ID: **42874** Analysis Date: **2/12/2024** SeqNo: **1870049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	137	22.2	277.2	14.63	44.0	6.01	130	91.93	39.2	30	
Aliphatic Hydrocarbon (C10-C12)	150	11.1	138.6	65.65	61.1	11.6	127	106.1	34.4	30	
Aliphatic Hydrocarbon (C12-C16)	337	11.1	138.6	234.0	74.6	24.7	129	231.2	37.3	30	
Aliphatic Hydrocarbon (C16-C21)	265	11.1	138.6	166.5	70.7	25.5	132	191.3	32.1	30	
Aliphatic Hydrocarbon (C21-C34)	210	11.1	138.6	98.08	81.1	21.4	138	165.0	24.2	30	
Surr: 1-Chlorooctadecane	78.0		110.9		70.3	50	150		0		

Sample ID: **2402128-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/8/2024** RunNo: **89582**
Client ID: **BATCH** Batch ID: **42874** Analysis Date: **2/12/2024** SeqNo: **1870057**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	147	22.2	277.2	8.000	50.1	12.6	130	121.9	18.6	30	
Aromatic Hydrocarbon (C10-C12)	129	11.1	138.6	34.34	68.3	26.3	130	109.6	16.3	30	
Aromatic Hydrocarbon (C12-C16)	217	11.1	138.6	112.0	75.5	23.3	139	177.8	19.8	30	
Aromatic Hydrocarbon (C16-C21)	271	11.1	138.6	174.1	70.2	32.2	131	211.3	24.9	30	
Aromatic Hydrocarbon (C21-C34)	186	11.1	138.6	106.0	58.0	35.8	139	146.4	24.1	30	
Surr: o-Terphenyl	87.7		110.9		79.1	50	150		0		

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42804**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **LCSS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868715**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.6	2.50	20.00	0	98.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	8.87	2.50	10.00	0	88.7	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.3	2.50	10.00	0	103	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.4	2.50	10.00	0	104	70	130				
Aromatic Hydrocarbon (C8-C10)	48.7	2.50	50.00	0	97.5	70	130				
Aromatic Hydrocarbon (C10-C12)	9.91	2.50	10.00	0	99.1	70	130				
Aromatic Hydrocarbon (C12-C13)	10.4	2.50	10.00	0	104	70	130				
Surr: 2,5-dibromotoluene	2.41		2.500		96.3	60	140				

Sample ID: **MB-42804**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **MBLKS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868698**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	2.37		2.500		95.0	60	140				

Sample ID: **2402008-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **BATCH**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	104	18.3		0	0			113.7	8.57	25	D
Aliphatic Hydrocarbon (C6-C8)	499	18.3		0	0			498.5	0.0812	25	D
Aliphatic Hydrocarbon (C8-C10)	419	18.3		0	0			395.4	5.80	25	DE
Aliphatic Hydrocarbon (C10-C12)	525	18.3		0	0			505.0	3.86	25	DE
Aromatic Hydrocarbon (C8-C10)	1,810	18.3		0	0			1,757	3.17	25	D

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2402008-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **BATCH** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	608	18.3		0	0			596.1	1.91	25	DE
Aromatic Hydrocarbon (C12-C13)	208	18.3		0	0			204.9	1.53	25	D
Surr: 2,5-dibromotoluene	19.0		18.30		104	60	140		0	0	D

Sample ID: **2402008-005BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **BATCH** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868705**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	24.0	1.67	13.35	10.72	99.7	70	130				H
Aliphatic Hydrocarbon (C6-C8)	18.6	1.67	6.673	11.16	111	70	130				H
Aliphatic Hydrocarbon (C8-C10)	73.0	1.67	6.673	67.05	89.0	70	130				H
Aliphatic Hydrocarbon (C10-C12)	152	1.67	6.673	148.0	63.0	70	130				SH
Aromatic Hydrocarbon (C8-C10)	143	1.67	33.36	111.3	95.5	70	130				H
Aromatic Hydrocarbon (C10-C12)	141	1.67	6.673	139.7	15.6	70	130				SH
Aromatic Hydrocarbon (C12-C13)	74.3	1.67	6.673	69.70	68.8	70	130				SH
Surr: 2,5-dibromotoluene	1.82		1.668		109	60	140				H

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402086
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402086

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402019	D-661

REMARKS

EIM and EQuIS 4

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
HA-4-S4		1/29/2024	1350	soil	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1335
Received by:		Nathan Hobbs	FAI	2/6/24	1540
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402019
Work Order Number: 2402047

February 09, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 2/2/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/09/2024*

CLIENT: Friedman & Bruya
Project: 402019
Work Order: 2402047

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402047-001	HA-4-S2	01/29/2024 11:30 AM	02/02/2024 12:53 PM
2402047-002	HA-4-S4	01/29/2024 1:50 PM	02/02/2024 12:53 PM
2402047-003	HA-4-S6	01/29/2024 4:00 PM	02/02/2024 12:53 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402047**
Date: **2/9/2024**

CLIENT: Friedman & Bruya
Project: 402019

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402019

Lab ID: 2402047-001 **Collection Date:** 1/29/2024 11:30:00 AM
Client Sample ID: **HA-4-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 3:08:00 PM

Lab ID: 2402047-002 **Collection Date:** 1/29/2024 1:50:00 PM
Client Sample ID: **HA-4-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 4:10:00 PM

Lab ID: 2402047-003 **Collection Date:** 1/29/2024 4:00:00 PM
Client Sample ID: **HA-4-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 4:24:00 PM

Work Order: 2402047
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42885**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **MBLKS**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869395**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42885**	SampType: **LCS**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **LCSS**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869396**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	80	120				

Sample ID: **2402047-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869398**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2402047-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869399**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.10	0.150	1.000	0	110	75	125				

Sample ID: **2402047-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869400**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125	1.095	1.63	20	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402047
Logged by:	Morgan Wilson	Date Received:	2/2/2024 12:53:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402047

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO. 402019	PO # D-655
REMARKS EIM and EQuIS 4	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: TOC	Nitrate	Nitrite	Sulfate	RSK-175						Notes
HA-4-S2		1/29/2024	1130	soil	1	x										
HA-4-S4		1/29/2024	1350	soil	1	x										
HA-4-S6		1/29/2024	1600	soil	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/2/24	0915
Received by:		NAK RJS	FAI	2/2/24	12:53
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 26, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on January 29, 2024 from the Whidbey Marine 0204475-001, F&BI 401358 project. The sample IDs for the TSS results have been corrected.

We apologize for the inconvenience and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0223R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 23, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 29, 2024 from the Whidbey Marine 0204475-001, F&BI 401358 project. There are 126 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0223R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 29, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 401358 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401358 -01	HA-1-S1
401358 -02	HA-1-S2
401358 -03	HA-1-S3
401358 -04	HA-1-S4
401358 -05	HA-1-S5
401358 -06	HA-1-S6
401358 -07	HA-1-DUP
401358 -08	HA-2-S1.5
401358 -09	HA-2-S2
401358 -10	HA-2-S3
401358 -11	HA-2-S4
401358 -12	HA-2-S5
401358 -13	HA-2-S6
401358 -14	HA-2-S7
401358 -15	HA-2-S8
401358 -16	HA-2-S9
401358 -17	HA-2-S10
401358 -18	HA-3-S1
401358 -19	HA-3-S2
401358 -20	HA-3-S3
401358 -21	HA-3-S4
401358 -22	HA-3-S5
401358 -23	HA-3-S6
401358 -24	MW-23D-S3
401358 -25	MW-23D-S4
401358 -26	MW-23D-S5
401358 -27	MW-23D-S6
401358 -28	MW-23D-DUP
401358 -29	HA-1-GW
401358 -30	HA-2-GW
401358 -31	HA-3-GW
401358 -32	Dup-01

Samples HA-1-S2, HA-1-S4, HA-1-S6, HA-1-DUP, HA-2-S3, HA-2-S5, HA-2-S7, MW-23D-S4, MW-23D-S6, and MW-23D-DUP were sent to Fremont Analytical for total organic carbon analysis. In addition, samples HA-1-S6, HA-1-DUP, HA-2-S7, HA-3-S6, and MW-23D-S6 were sent to Fremont Analytical for EPH and VPH analyses. The reports are enclosed.

CASE NARRATIVE (continued)

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

Several 8260D compounds exceeded the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

The 8260D samples HA-2-S9, HA-2-S10, and MW-23D-S5 were analyzed outside of the holding time. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-1-S1 401358-01	2
HA-1-S2 401358-02	4
HA-1-S3 401358-03	13
HA-1-S4 401358-04	16
HA-1-S6 401358-06	10
HA-1-DUP 401358-07	11
HA-2-S1.5 401358-08	6
HA-2-S2 401358-09	4
HA-2-S3 401358-10	3
HA-2-S4 401358-11	13
HA-2-S5 401358-12	21

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-2-S7 401358-14	11
HA-2-S8 401358-15	10
HA-2-S9 401358-16	13
HA-2-S10 401358-17	18
HA-3-S1 401358-18	6
HA-3-S2 401358-19	7
HA-3-S3 401358-20	8
HA-3-S4 401358-21	23
HA-3-S6 401358-23	8
MW-23D-S3 401358-24	17
MW-23D-S4 401358-25	18

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-23D-S5 401358-26	6
MW-23D-S6 401358-27	11
MW-23D-DUP 401358-28	3

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-1-S1 401358-01	<5	90
HA-1-S2 401358-02	<5	96
HA-1-S3 401358-03	<5	91
HA-1-S4 401358-04	<5	95
HA-1-S6 401358-06 1/50	2,000	103
HA-1-DUP 401358-07 1/20	1,000	107
HA-2-S1.5 401358-08	<5	95
HA-2-S2 401358-09	<5	96
HA-2-S3 401358-10	<5	92
HA-2-S4 401358-11	<5	96
HA-2-S5 401358-12	<5	96

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-2-S7 401358-14 1/100	17,000	114
HA-2-S8 401358-15	6.4	136
HA-3-S1 401358-18	<5	92
HA-3-S2 401358-19	<5	96
HA-3-S3 401358-20	<5	90
HA-3-S4 401358-21	<5	97
HA-3-S6 401358-23 1/100	11,000	137
MW-23D-S3 401358-24	<5	93
MW-23D-S4 401358-25	<5	90
MW-23D-S6 401358-27 1/20	1,100	117

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-23D-DUP 401358-28 1/50	1,000	103
Method Blank 04-0188 MB	<5	132
Method Blank 04-189 MB	<5	94
Method Blank 04-193 MB	<5	129

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24
Date Analyzed: 01/30/24 and 01/31/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-2-S9 401358-16	<0.02	<0.02	<0.02	<0.06	<5	87
HA-2-S10 401358-17	<0.02	<0.02	<0.02	<0.06	<5	85
MW-23D-S5 401358-26	<0.02	<0.02	<0.02	<0.06	<5	87
Method Blank 04-0188 MB	<0.02	<0.02	<0.02	<0.06	<5	110
Method Blank 04-189 MB	<0.02	<0.02	<0.02	<0.06	<5	90

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/31/24
Date Analyzed: 01/31/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-1-GW 401358-29	<1	1.8	<1	<3	<100	85
HA-2-GW 401358-30	1.0	2.2	<1	5.0	900	85
HA-3-GW 401358-31	<1	<1	<1	<3	<100	88
Dup-01 401358-32	<1	<1	<1	<3	<100	86
Method Blank 04-0191 MB	<1	<1	<1	<3	<100	88

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-1-S1 401358-01	<50	<250	99
HA-1-S2 401358-02	<50	<250	96
HA-1-S3 401358-03	<50	<250	101
HA-1-S4 401358-04	<50	<250	97
HA-1-S6 401358-06	<50	<250	106
HA-1-DUP 401358-07	<50	<250	107
HA-2-S1.5 401358-08	<50	<250	101
HA-2-S2 401358-09	<50	<250	103
HA-2-S3 401358-10	<50	<250	102
HA-2-S4 401358-11	<50	<250	102
HA-2-S5 401358-12	<50	<250	105

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-2-S7 401358-14	1,400 x	<250	107
HA-2-S8 401358-15	<50	<250	91
HA-2-S9 401358-16	<50	<250	91
HA-2-S10 401358-17	<50	<250	94
HA-3-S1 401358-18	<50	<250	98
HA-3-S2 401358-19	<50	<250	97
HA-3-S3 401358-20	<50	<250	100
HA-3-S4 401358-21	<50	<250	103
HA-3-S6 401358-23	340 x	<250	98
MW-23D-S3 401358-24	<50	<250	94
MW-23D-S4 401358-25	<50	<250	95

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-23D-S5 401358-26	<50	<250	93
MW-23D-S6 401358-27	230 x	<250	104
MW-23D-DUP 401358-28	65 x	<250	101
Method Blank 04-259 MB	<50	<250	92
Method Blank 04-257 MB2	<50	<250	101
Method Blank 04-287 MB	<50	<250	90

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-1-GW 401358-29 1/1.2	<60	<300	93
HA-2-GW 401358-30	390 x	<250	93
HA-3-GW 401358-31 1/1.2	<60	<300	83
Dup-01 401358-32 1/1.2	<60	<300	82
Method Blank 04-0251 MB2	<50	<250	89

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-01
Date Analyzed:	01/30/24	Data File:	401358-01.041
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.48
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-02
Date Analyzed:	01/30/24	Data File:	401358-02.119
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.40
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-03
Date Analyzed:	01/30/24	Data File:	401358-03.120
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.28
Lead	1.93

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-04
Date Analyzed:	01/30/24	Data File:	401358-04.121
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.65
Lead	2.25

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-06
Date Analyzed:	01/30/24	Data File:	401358-06.122
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.79
Lead	1.55

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-07
Date Analyzed:	01/30/24	Data File:	401358-07.123
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.84
Lead	1.59

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-08
Date Analyzed:	01/30/24	Data File:	401358-08.124
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.47
Lead	2.08

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-09
Date Analyzed:	01/30/24	Data File:	401358-09.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.49
Lead	1.25

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-10
Date Analyzed:	01/30/24	Data File:	401358-10.135
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.83
Lead	1.23

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-11
Date Analyzed:	01/30/24	Data File:	401358-11.136
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.72
Lead	2.14

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-12
Date Analyzed:	01/30/24	Data File:	401358-12.137
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.76
Lead	6.01

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14
Date Analyzed:	01/30/24	Data File:	401358-14.138
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.86
Lead	1.82

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15
Date Analyzed:	02/01/24	Data File:	401358-15.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.73
Lead	1.86

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-18
Date Analyzed:	01/30/24	Data File:	401358-18.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Lead	1.21

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-19
Date Analyzed:	01/30/24	Data File:	401358-19.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.38
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-20
Date Analyzed:	01/30/24	Data File:	401358-20.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.26
Lead	2.03

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-21
Date Analyzed:	01/30/24	Data File:	401358-21.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.58
Lead	2.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23
Date Analyzed:	01/30/24	Data File:	401358-23.162
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.22
Lead	1.73

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-24
Date Analyzed:	01/30/24	Data File:	401358-24.163
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.40
Lead	3.16

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-25
Date Analyzed:	01/30/24	Data File:	401358-25.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.78
Lead	3.69

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-27
Date Analyzed:	01/30/24	Data File:	401358-27.171
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.09
Lead	3.39

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-28
Date Analyzed:	01/30/24	Data File:	401358-28.177
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.67
Lead	3.10

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	I4-67 mb
Date Analyzed:	01/30/24	Data File:	I4-67 mb.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	I4-68 mb
Date Analyzed:	01/30/24	Data File:	I4-68 mb.115
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	I4-80 mb
Date Analyzed:	02/01/24	Data File:	I4-80 mb.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-01 1/0.5
Date Analyzed:	01/31/24	Data File:	013127.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0014
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0064
Hexane	<0.25	o-Xylene	0.0023
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0036	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-02 1/0.5
Date Analyzed:	01/31/24	Data File:	013128.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0019
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0085
Hexane	<0.25	o-Xylene	0.0020
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0042	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-03 1/0.5
Date Analyzed:	01/31/24	Data File:	013129.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0019	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-04 1/0.5
Date Analyzed:	01/31/24	Data File:	013130.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0014	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-06
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	86	114
Toluene-d8	98	86	115
4-Bromofluorobenzene	105	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.32
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	1.3
Hexane	<0.25	o-Xylene	0.56
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.11
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.26
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	1.0
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.98	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.53
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-07
Date Analyzed:	01/31/24	Data File:	013115.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	86	86	114
Toluene-d8	122 ip	86	115
4-Bromofluorobenzene	98	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.035
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	69 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	240 ve
Hexane	8.9	o-Xylene	120 ve
Methylene chloride	<0.5	Styrene	3.6
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	8.3
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	34 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	66 ve
Chloroform	0.56	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	120 ve
Benzene	0.13	sec-Butylbenzene	4.0
Trichloroethene	<0.02	p-Isopropyltoluene	1.9
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	120 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	43 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-07 1/50
Date Analyzed:	02/01/24	Data File:	020113.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	114
Toluene-d8	104	86	115
4-Bromofluorobenzene	107	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	100
Ethylbenzene	63
m,p-Xylene	260
o-Xylene	94
n-Propylbenzene	28
1,3,5-Trimethylbenzene	56
1,2,4-Trimethylbenzene	190
Naphthalene	35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-08 1/0.5
Date Analyzed:	01/31/24	Data File:	013131.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	100	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-09 1/0.5
Date Analyzed:	01/31/24	Data File:	013132.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	99	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0042
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0027	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-10 1/0.5
Date Analyzed:	01/31/24	Data File:	013133.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0010
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0049
Hexane	<0.25	o-Xylene	0.0016
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0034	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-11 1/0.5
Date Analyzed:	01/31/24	Data File:	013134.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0027
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0057
Hexane	<0.25	o-Xylene	0.0019
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0035	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-12 1/0.5
Date Analyzed:	01/31/24	Data File:	013135.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-14
Date Analyzed:	01/31/24	Data File:	013118.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	86	114
Toluene-d8	136 ip	86	115
4-Bromofluorobenzene	115	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.037
Vinyl chloride	<0.05	Dibromochloromethane	0.10
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	120 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	400 ve
Hexane	49 ve	o-Xylene	250 ve
Methylene chloride	<0.5	Styrene	8.7
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	18 ve
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	73 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	110 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	180 ve
Benzene	1.5	sec-Butylbenzene	8.5
Trichloroethene	<0.02	p-Isopropyltoluene	3.9
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	5.0	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	250 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	75 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-14 1/500
Date Analyzed:	02/01/24	Data File:	020114.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	114
Toluene-d8	97	86	115
4-Bromofluorobenzene	108	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	430
Ethylbenzene	180
m,p-Xylene	800
o-Xylene	330
Isopropylbenzene	<25
n-Propylbenzene	79
1,3,5-Trimethylbenzene	130
1,2,4-Trimethylbenzene	460
Naphthalene	96

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15 1/0.5
Date Analyzed:	02/01/24	Data File:	020118.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0022
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	0.12
Acetone	<5 k	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.46
Hexane	<0.25	o-Xylene	0.16
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.051
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1 k	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.22
Benzene	0.013	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.45	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.18
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 k		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S9 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-16 1/0.5
Date Analyzed:	02/23/24 11:21	Data File:	022312.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	84	120
Toluene-d8	92	73	128
4-Bromofluorobenzene	104	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S10 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-17 1/0.5
Date Analyzed:	02/23/24 10:58	Data File:	022311.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	84	120
Toluene-d8	92	73	128
4-Bromofluorobenzene	104	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S5 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-26 1/0.5
Date Analyzed:	02/23/24 10:34	Data File:	022310.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	93	73	128
4-Bromofluorobenzene	105	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-18 1/0.5
Date Analyzed:	01/31/24	Data File:	013136.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-19 1/0.5
Date Analyzed:	01/31/24	Data File:	013137.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0018	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-20 1/0.5
Date Analyzed:	01/31/24	Data File:	013138.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0021
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0030	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-21 1/0.5
Date Analyzed:	01/31/24	Data File:	013139.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	99	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-23
Date Analyzed:	01/31/24	Data File:	013119.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	114
Toluene-d8	135 ip	86	115
4-Bromofluorobenzene	116	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.16
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	150 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	430 ve
Hexane	260 ve	o-Xylene	240 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	25 ve
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	93 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	120 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	200 ve
Benzene	<0.03	sec-Butylbenzene	9.3
Trichloroethene	<0.02	p-Isopropyltoluene	4.1
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	130 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	76 ve
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-23 1/500
Date Analyzed:	02/01/24	Data File:	020115.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	114
Toluene-d8	100	86	115
4-Bromofluorobenzene	107	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	160
Hexane	250
Ethylbenzene	280
m,p-Xylene	1,000
o-Xylene	350
Isopropylbenzene	29
n-Propylbenzene	97
1,3,5-Trimethylbenzene	150
1,2,4-Trimethylbenzene	520
Naphthalene	86

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-24 1/0.5
Date Analyzed:	01/31/24	Data File:	013140.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	102	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-25 1/0.5
Date Analyzed:	01/31/24	Data File:	013141.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-27
Date Analyzed:	01/31/24	Data File:	013116.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	86	114
Toluene-d8	102	86	115
4-Bromofluorobenzene	124 ip	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	4.6
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	18
Hexane	0.89	o-Xylene	3.4
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.81
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	3.4
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	7.2
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	16
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	0.33
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	5.2	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	4.6
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-28
Date Analyzed:	01/31/24	Data File:	013117.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	114
Toluene-d8	101	86	115
4-Bromofluorobenzene	113	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	3.3
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	13
Hexane	1.1	o-Xylene	2.7
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.57
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.6
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	5.1
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	9.8
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	0.22
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	2.9	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.6
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0243 mb 1/0.5
Date Analyzed:	01/31/24	Data File:	013126.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	111	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0247 mb 1/0.5
Date Analyzed:	01/31/24	Data File:	013125.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	04-0270 mb 1/0.5
Date Analyzed:	02/01/24	Data File:	020110.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	79	128
Toluene-d8	100	84	121
4-Bromofluorobenzene	106	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	<0.001
Acetone	<5 k	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1 k	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 k		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	04-0384 mb 1/0.5
Date Analyzed:	02/23/24	Data File:	022309.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	84	120
Toluene-d8	103	73	128
4-Bromofluorobenzene	106	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	HA-1-GW	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-29
Date Analyzed:	01/31/24	Data File:	013113.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	HA-2-GW	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-30
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0246 mb
Date Analyzed:	01/31/24	Data File:	013109.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	78	126
Toluene-d8	90	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-01 1/5
Date Analyzed:	01/31/24	Data File:	013113.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	10	198
2-Fluorobiphenyl	98	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	103	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-02 1/5
Date Analyzed:	01/30/24	Data File:	013011.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	10	198
2-Fluorobiphenyl	85	45	117
2,4,6-Tribromophenol	83	11	158
Terphenyl-d14	88	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-03 1/5
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	86	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-04 1/5
Date Analyzed:	01/31/24	Data File:	013115.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	65	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	81	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-06 1/5
Date Analyzed:	01/31/24	Data File:	013116.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.29
2-Methylnaphthalene	1.2
1-Methylnaphthalene	0.60
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.037
Anthracene	0.018
Fluoranthene	<0.01
Pyrene	0.011
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-07 1/5
Date Analyzed:	01/31/24	Data File:	013117.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	80	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.35
2-Methylnaphthalene	1.0
1-Methylnaphthalene	0.46
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.025
Anthracene	0.012
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-08 1/5
Date Analyzed:	01/30/24	Data File:	013016.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67	10	198
2-Fluorobiphenyl	75	45	117
2,4,6-Tribromophenol	79	11	158
Terphenyl-d14	77	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	0.17
Pyrene	0.32
Benz(a)anthracene	0.16
Chrysene	0.24
Benzo(a)pyrene	0.26
Benzo(b)fluoranthene	0.41
Benzo(k)fluoranthene	0.14
Indeno(1,2,3-cd)pyrene	0.17
Dibenz(a,h)anthracene	0.049
Benzo(g,h,i)perylene	0.13

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-09 1/5
Date Analyzed:	01/31/24	Data File:	013118.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	10	198
2-Fluorobiphenyl	68	45	117
2,4,6-Tribromophenol	79	11	158
Terphenyl-d14	76	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-10 1/5
Date Analyzed:	01/31/24	Data File:	013119.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	61	10	198
2-Fluorobiphenyl	70	45	117
2,4,6-Tribromophenol	84	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-11 1/5
Date Analyzed:	02/01/24	Data File:	020116.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	89	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.010
2-Methylnaphthalene	0.18
1-Methylnaphthalene	0.097
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-12 1/5
Date Analyzed:	01/30/24	Data File:	013010.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	16	137
2-Fluorobiphenyl	76	46	122
2,4,6-Tribromophenol	79	17	154
Terphenyl-d14	74	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14 1/5
Date Analyzed:	01/30/24	Data File:	013011.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	16	137
2-Fluorobiphenyl	72	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	69	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	24 ve
2-Methylnaphthalene	27 ve
1-Methylnaphthalene	13 ve
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.21
Anthracene	0.12
Fluoranthene	0.036
Pyrene	0.052
Benz(a)anthracene	0.050
Chrysene	0.019
Benzo(a)pyrene	0.022
Benzo(b)fluoranthene	0.012
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.014

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14 1/250
Date Analyzed:	02/01/24	Data File:	020117.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	105 d	10	198
2-Fluorobiphenyl	80 d	45	117
2,4,6-Tribromophenol	184 d	11	158
Terphenyl-d14	75 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	43
2-Methylnaphthalene	42
1-Methylnaphthalene	18

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15 1/5
Date Analyzed:	02/02/24	Data File:	020140.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	84	16	137
2-Fluorobiphenyl	84	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	81	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.019
2-Methylnaphthalene	0.029
1-Methylnaphthalene	0.010
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-18 1/5
Date Analyzed:	01/30/24	Data File:	013012.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	16	137
2-Fluorobiphenyl	65	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	67	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-19 1/5
Date Analyzed:	01/30/24	Data File:	013013.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	55	16	137
2-Fluorobiphenyl	63	46	122
2,4,6-Tribromophenol	72	17	154
Terphenyl-d14	66	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-20 1/5
Date Analyzed:	01/30/24	Data File:	013014.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67	16	137
2-Fluorobiphenyl	72	46	122
2,4,6-Tribromophenol	80	17	154
Terphenyl-d14	72	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-21 1/5
Date Analyzed:	01/30/24	Data File:	013015.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	16	137
2-Fluorobiphenyl	69	46	122
2,4,6-Tribromophenol	75	17	154
Terphenyl-d14	68	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23 1/5
Date Analyzed:	01/30/24	Data File:	013016.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	16	137
2-Fluorobiphenyl	71	46	122
2,4,6-Tribromophenol	83	17	154
Terphenyl-d14	70	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	4.7
2-Methylnaphthalene	11 ve
1-Methylnaphthalene	4.8
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.11
Anthracene	0.062
Fluoranthene	0.021
Pyrene	0.028
Benz(a)anthracene	0.028
Chrysene	<0.01
Benzo(a)pyrene	0.011
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23 1/50
Date Analyzed:	02/01/24	Data File:	020118.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85 d	10	198
2-Fluorobiphenyl	86 d	45	117
2,4,6-Tribromophenol	95 d	11	158
Terphenyl-d14	90 d	50	124

Compounds:	Concentration mg/kg (ppm)
2-Methylnaphthalene	14

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-24 1/5
Date Analyzed:	01/30/24	Data File:	013017.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	53	16	137
2-Fluorobiphenyl	62	46	122
2,4,6-Tribromophenol	64	17	154
Terphenyl-d14	63	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.010
2-Methylnaphthalene	0.026
1-Methylnaphthalene	0.011
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-25 1/5
Date Analyzed:	01/30/24	Data File:	013018.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	16	137
2-Fluorobiphenyl	66	46	122
2,4,6-Tribromophenol	67	17	154
Terphenyl-d14	64	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-27 1/5
Date Analyzed:	01/30/24	Data File:	013019.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	16	137
2-Fluorobiphenyl	76	46	122
2,4,6-Tribromophenol	83	17	154
Terphenyl-d14	71	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.49
2-Methylnaphthalene	0.60
1-Methylnaphthalene	0.25
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.020
Phenanthrene	0.030
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-28 1/5
Date Analyzed:	01/30/24	Data File:	013020.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	16	137
2-Fluorobiphenyl	71	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	68	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.35
2-Methylnaphthalene	0.42
1-Methylnaphthalene	0.18
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.013
Phenanthrene	0.020
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	04-0260 mb 1/5
Date Analyzed:	01/31/24	Data File:	013108.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	88	10	198
2-Fluorobiphenyl	95	45	117
2,4,6-Tribromophenol	93	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	04-0253 mb2 1/5
Date Analyzed:	02/01/24	Data File:	020109.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104	10	198
2-Fluorobiphenyl	107	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	108	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	04-0263 mb2 1/5
Date Analyzed:	02/02/24	Data File:	020139.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	94	16	137
2-Fluorobiphenyl	91	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	87	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/31/24
Date Analyzed: 01/31/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
HA-1-GW 401358-29	1,200
HA-2-GW 401358-30	1,200
HA-3-GW 401358-31	8,300
Dup-01 401358-32	7,200
Method Blank I4-0069 MB	<5

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 401389-42 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	40	8.9	88 b	90 b	50-150	2 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	112	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401331-31 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	1.0	<0.04	69	70	50-150	1
Toluene	mg/kg (ppm)	1.0	<0.04	68	70	50-150	3
Ethylbenzene	mg/kg (ppm)	1.0	<0.04	67	71	50-150	6
Xylenes	mg/kg (ppm)	3.0	<0.12	67	73	50-150	9
Gasoline	mg/kg (ppm)	40	<10	68	70	50-150	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	92	70-130
Toluene	mg/kg (ppm)	1.0	93	70-130
Ethylbenzene	mg/kg (ppm)	1.0	97	70-130
Xylenes	mg/kg (ppm)	3.0	100	70-130
Gasoline	mg/kg (ppm)	40	107	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401350-31 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	1.0	<0.02	83	86	50-150	4
Toluene	mg/kg (ppm)	1.0	<0.02	79	81	50-150	2
Ethylbenzene	mg/kg (ppm)	1.0	<0.02	76	78	50-150	3
Xylenes	mg/kg (ppm)	3.0	<0.06	77	77	50-150	0
Gasoline	mg/kg (ppm)	40	<5	97	92	50-150	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	97	70-130
Toluene	mg/kg (ppm)	1.0	95	70-130
Ethylbenzene	mg/kg (ppm)	1.0	89	70-130
Xylenes	mg/kg (ppm)	3.0	87	70-130
Gasoline	mg/kg (ppm)	40	100	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401358-29 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	1.8	1.8	0
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	70-130
Toluene	ug/L (ppb)	50	96	70-130
Ethylbenzene	ug/L (ppb)	50	90	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401331-31 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	200	108	110	64-136	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401358-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	110	116	64-136	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401358-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	84	84	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	84	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	100	65-151	4

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401358-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	100	95	75-125	5
Lead	mg/kg (ppm)	50	<5	96	94	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	80-120
Lead	mg/kg (ppm)	50	95	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401358-27 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	113	99	75-125	13
Lead	mg/kg (ppm)	50	<5	104	97	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	97	80-120
Lead	mg/kg (ppm)	50	99	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402008-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	102	99	75-125	3
Lead	mg/kg (ppm)	50	<5	104	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Lead	mg/kg (ppm)	50	98	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	68	68	10-142	0
Chloromethane	mg/kg (ppm)	2	<0.5	93	98	10-126	5
Vinyl chloride	mg/kg (ppm)	2	<0.05	93	97	10-138	4
Bromomethane	mg/kg (ppm)	2	<0.5	94	90	10-163	4
Chloroethane	mg/kg (ppm)	2	<0.5	93	89	10-176	4
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	98	94	10-176	4
Acetone	mg/kg (ppm)	10	<5	99	93	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	101	100	10-160	1
Hexane	mg/kg (ppm)	2	<0.25	107	104	10-137	3
Methylene chloride	mg/kg (ppm)	2	<0.5	95	93	10-156	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	102	105	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	101	98	14-137	3
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	101	101	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	107	109	10-158	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	97	99	25-135	2
Chloroform	mg/kg (ppm)	2	<0.05	101	104	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	101	99	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	110	107	12-160	3
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	101	101	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	103	101	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	103	105	9-164	2
Benzene	mg/kg (ppm)	2	<0.03	100	100	29-129	0
Trichloroethene	mg/kg (ppm)	2	<0.02	99	101	21-139	2
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	101	100	30-135	1
Bromodichloromethane	mg/kg (ppm)	2	<0.05	104	102	23-155	2
Dibromomethane	mg/kg (ppm)	2	<0.05	99	99	23-145	0
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	102	101	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	104	107	28-144	3
Toluene	mg/kg (ppm)	2	<0.05	97	102	35-130	5
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	101	104	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	106	108	10-205	2
2-Hexanone	mg/kg (ppm)	10	<0.5	98	102	15-166	4
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	107	106	31-137	1
Tetrachloroethene	mg/kg (ppm)	2	<0.025	103	101	20-133	2
Dibromochloromethane	mg/kg (ppm)	2	<0.05	103	107	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	104	106	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	100	102	32-129	2
Ethylbenzene	mg/kg (ppm)	2	<0.05	102	103	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	100	106	31-143	6
m,p-Xylene	mg/kg (ppm)	4	<0.1	101	103	34-136	2
o-Xylene	mg/kg (ppm)	2	<0.05	99	100	33-134	1
Styrene	mg/kg (ppm)	2	<0.05	101	104	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	100	102	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	104	109	21-156	5
n-Propylbenzene	mg/kg (ppm)	2	<0.05	106	103	23-146	3
Bromobenzene	mg/kg (ppm)	2	<0.05	108	107	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	105	18-149	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	110	104	28-140	6
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	110	110	25-144	0
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	102	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	103	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	103	101	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	105	103	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	106	106	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	107	106	21-149	1
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	102	101	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	104	102	29-129	2
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	102	101	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	104	102	11-161	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	105	103	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	118	111	10-142	6
Naphthalene	mg/kg (ppm)	2	<0.05	104	102	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	107	107	20-144	0

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	76	10-146
Chloromethane	mg/kg (ppm)	2	92	27-133
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Bromomethane	mg/kg (ppm)	2	98	10-201
Chloroethane	mg/kg (ppm)	2	92	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	94	10-196
Acetone	mg/kg (ppm)	10	91	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	102	47-128
Hexane	mg/kg (ppm)	2	97	43-142
Methylene chloride	mg/kg (ppm)	2	88	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	100	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	99	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	100	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	95	64-135
Chloroform	mg/kg (ppm)	2	98	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	82	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	103	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	96	64-136
Carbon tetrachloride	mg/kg (ppm)	2	101	60-139
Benzene	mg/kg (ppm)	2	96	65-136
Trichloroethene	mg/kg (ppm)	2	94	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	95	61-145
Bromodichloromethane	mg/kg (ppm)	2	103	57-126
Dibromomethane	mg/kg (ppm)	2	95	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	99	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	101	65-143
Toluene	mg/kg (ppm)	2	96	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	101	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	102	62-131
2-Hexanone	mg/kg (ppm)	10	97	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	102	67-128
Tetrachloroethene	mg/kg (ppm)	2	100	68-128
Dibromochloromethane	mg/kg (ppm)	2	103	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	99	66-129
Chlorobenzene	mg/kg (ppm)	2	96	67-128
Ethylbenzene	mg/kg (ppm)	2	99	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	101	64-121
m,p-Xylene	mg/kg (ppm)	4	99	68-128
o-Xylene	mg/kg (ppm)	2	98	67-129
Styrene	mg/kg (ppm)	2	98	67-129
Isopropylbenzene	mg/kg (ppm)	2	98	68-128
Bromoform	mg/kg (ppm)	2	106	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	107	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	107	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	110	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	114	61-137
2-Chlorotoluene	mg/kg (ppm)	2	104	69-128
4-Chlorotoluene	mg/kg (ppm)	2	107	67-127
tert-Butylbenzene	mg/kg (ppm)	2	106	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	109	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	107	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	106	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	111	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	107	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	118	50-153
Naphthalene	mg/kg (ppm)	2	106	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	111	61-126

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-24 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	100	103	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	120	125	10-126	4
Vinyl chloride	mg/kg (ppm)	2	<0.05	119	118	10-138	1
Bromomethane	mg/kg (ppm)	2	<0.5	101	100	10-163	1
Chloroethane	mg/kg (ppm)	2	<0.5	99	100	10-176	1
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	109	109	10-176	0
Acetone	mg/kg (ppm)	10	<5	119	131	10-163	10
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	121	119	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	133	125	10-137	6
Methylene chloride	mg/kg (ppm)	2	<0.5	123	121	10-156	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	135	138	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	127	130	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	135	133	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	133	138	10-158	4
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	131	130	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	132	132	21-145	0
2-Butanone (MEK)	mg/kg (ppm)	10	<1	142	143	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	141	140	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	129	132	10-156	2
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	134	128	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	139	136	9-164	2
Benzene	mg/kg (ppm)	2	<0.03	132 vo	130 vo	29-129	2
Trichloroethene	mg/kg (ppm)	2	<0.02	128	128	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	134	133	30-135	1
Bromodichloromethane	mg/kg (ppm)	2	<0.05	140	139	23-155	1
Dibromomethane	mg/kg (ppm)	2	<0.05	130	129	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	139	138	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	142	139	28-144	2
Toluene	mg/kg (ppm)	2	<0.05	135 vo	138 vo	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	140	146	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	145	150	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	143	144	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	142 vo	148 vo	31-137	4
Tetrachloroethene	mg/kg (ppm)	2	<0.025	135 vo	133	20-133	1
Dibromochloromethane	mg/kg (ppm)	2	<0.05	138	143	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	141	143 vo	28-142	1
Chlorobenzene	mg/kg (ppm)	2	<0.05	135 vo	140 vo	32-129	4
Ethylbenzene	mg/kg (ppm)	2	<0.05	139 vo	142 vo	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	138	139	31-143	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	138 vo	139 vo	34-136	1
o-Xylene	mg/kg (ppm)	2	<0.05	135 vo	138 vo	33-134	2
Styrene	mg/kg (ppm)	2	<0.05	140 vo	143 vo	35-137	2
Isopropylbenzene	mg/kg (ppm)	2	<0.05	137	137	31-142	0
Bromoform	mg/kg (ppm)	2	<0.05	141	146	21-156	3
n-Propylbenzene	mg/kg (ppm)	2	<0.05	146	141	23-146	3
Bromobenzene	mg/kg (ppm)	2	<0.05	146 vo	143 vo	34-130	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	147	143	18-149	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	149 vo	146 vo	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	157 vo	153 vo	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	143 vo	140 vo	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	145 vo	142 vo	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	141 vo	139 vo	30-137	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	146	141	10-182	3
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	148 vo	140	23-145	6
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	148	142	21-149	4
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	134 vo	134 vo	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	141 vo	138 vo	29-129	2
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	139 vo	139 vo	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	146	148	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	138	139	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	151 vo	147 vo	10-142	3
Naphthalene	mg/kg (ppm)	2	<0.05	142	140	14-157	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	144	142	20-144	1

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	107	27-133
Vinyl chloride	mg/kg (ppm)	2	107	22-139
Bromomethane	mg/kg (ppm)	2	102	10-201
Chloroethane	mg/kg (ppm)	2	99	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	102	10-196
Acetone	mg/kg (ppm)	10	102	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	111	47-128
Hexane	mg/kg (ppm)	2	112	43-142
Methylene chloride	mg/kg (ppm)	2	99	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	112	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	103	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	109	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	110	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	106	64-135
Chloroform	mg/kg (ppm)	2	108	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	107	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	113	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	107	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	109	64-136
Carbon tetrachloride	mg/kg (ppm)	2	111	60-139
Benzene	mg/kg (ppm)	2	105	65-136
Trichloroethene	mg/kg (ppm)	2	101	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	107	61-145
Bromodichloromethane	mg/kg (ppm)	2	112	57-126
Dibromomethane	mg/kg (ppm)	2	107	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	113	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	110	65-143
Toluene	mg/kg (ppm)	2	110	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	116	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	120	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	120	67-128
Tetrachloroethene	mg/kg (ppm)	2	111	68-128
Dibromochloromethane	mg/kg (ppm)	2	114	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	119	66-129
Chlorobenzene	mg/kg (ppm)	2	110	67-128
Ethylbenzene	mg/kg (ppm)	2	114	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	115	64-121
m,p-Xylene	mg/kg (ppm)	4	112	68-128
o-Xylene	mg/kg (ppm)	2	110	67-129
Styrene	mg/kg (ppm)	2	112	67-129
Isopropylbenzene	mg/kg (ppm)	2	111	68-128
Bromoform	mg/kg (ppm)	2	119	56-132
n-Propylbenzene	mg/kg (ppm)	2	113	68-129
Bromobenzene	mg/kg (ppm)	2	116	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	115	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	117	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	123	61-137
2-Chlorotoluene	mg/kg (ppm)	2	112	69-128
4-Chlorotoluene	mg/kg (ppm)	2	115	67-127
tert-Butylbenzene	mg/kg (ppm)	2	111	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	114	69-128
sec-Butylbenzene	mg/kg (ppm)	2	115	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	114	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	109	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	112	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	110	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	116	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	112	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	120	50-153
Naphthalene	mg/kg (ppm)	2	113	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	115	61-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	71	69	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	98	96	10-126	2
Vinyl chloride	mg/kg (ppm)	2	<0.05	95	90	10-138	5
Bromomethane	mg/kg (ppm)	2	<0.5	87	80	10-163	8
Chloroethane	mg/kg (ppm)	2	<0.5	83	75	10-176	10
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	89	86	10-176	3
Acetone	mg/kg (ppm)	10	<5	91	88	10-163	3
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	100	96	10-160	4
Hexane	mg/kg (ppm)	2	<0.25	104	103	10-137	1
Methylene chloride	mg/kg (ppm)	2	<0.5	96	90	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	106	103	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	100	96	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	103	99	19-140	4
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	109	98	10-158	11
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	100	95	25-135	5
Chloroform	mg/kg (ppm)	2	<0.05	103	100	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	105	101	19-147	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	109	105	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	101	97	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	100	101	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	105	104	9-164	1
Benzene	mg/kg (ppm)	2	<0.03	102	98	29-129	4
Trichloroethene	mg/kg (ppm)	2	<0.02	98	95	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	102	100	30-135	2
Bromodichloromethane	mg/kg (ppm)	2	<0.05	103	103	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	101	95	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	106	102	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	110	104	28-144	6
Toluene	mg/kg (ppm)	2	<0.05	105	102	35-130	3
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	109	108	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	112	109	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	105	104	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	115	107	31-137	7
Tetrachloroethene	mg/kg (ppm)	2	<0.025	103	102	20-133	1
Dibromochloromethane	mg/kg (ppm)	2	<0.05	107	107	28-150	0
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	107	107	28-142	0
Chlorobenzene	mg/kg (ppm)	2	<0.05	106	101	32-129	5
Ethylbenzene	mg/kg (ppm)	2	<0.05	107	105	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	107	100	31-143	7
m,p-Xylene	mg/kg (ppm)	4	<0.1	105	102	34-136	3
o-Xylene	mg/kg (ppm)	2	<0.05	106	98	33-134	8
Styrene	mg/kg (ppm)	2	<0.05	106	103	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	104	102	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	109	108	21-156	1
n-Propylbenzene	mg/kg (ppm)	2	<0.05	105	107	23-146	2
Bromobenzene	mg/kg (ppm)	2	<0.05	105	107	34-130	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	109	109	18-149	0
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	109	110	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	113	117	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	106	106	31-134	0
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	107	109	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	105	102	30-137	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	104	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	108	109	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	108	110	21-149	2
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	101	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	105	105	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	104	103	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	108	105	11-161	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	104	105	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	112	117	10-142	4
Naphthalene	mg/kg (ppm)	2	<0.05	105	106	14-157	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	107	106	20-144	1

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	108	27-133
Vinyl chloride	mg/kg (ppm)	2	107	22-139
Bromomethane	mg/kg (ppm)	2	95	10-201
Chloroethane	mg/kg (ppm)	2	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	95	10-196
Acetone	mg/kg (ppm)	10	97	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	107	47-128
Hexane	mg/kg (ppm)	2	106	43-142
Methylene chloride	mg/kg (ppm)	2	101	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	115	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	107	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	110	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	118	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	107	64-135
Chloroform	mg/kg (ppm)	2	111	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	94	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	116	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	107	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	108	64-136
Carbon tetrachloride	mg/kg (ppm)	2	113	60-139
Benzene	mg/kg (ppm)	2	108	65-136
Trichloroethene	mg/kg (ppm)	2	105	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	106	61-145
Bromodichloromethane	mg/kg (ppm)	2	113	57-126
Dibromomethane	mg/kg (ppm)	2	105	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	109	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	112	65-143
Toluene	mg/kg (ppm)	2	106	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	117	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	118	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	118	67-128
Tetrachloroethene	mg/kg (ppm)	2	107	68-128
Dibromochloromethane	mg/kg (ppm)	2	115	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	112	66-129
Chlorobenzene	mg/kg (ppm)	2	107	67-128
Ethylbenzene	mg/kg (ppm)	2	110	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	112	64-121
m,p-Xylene	mg/kg (ppm)	4	107	68-128
o-Xylene	mg/kg (ppm)	2	108	67-129
Styrene	mg/kg (ppm)	2	112	67-129
Isopropylbenzene	mg/kg (ppm)	2	108	68-128
Bromoform	mg/kg (ppm)	2	116	56-132
n-Propylbenzene	mg/kg (ppm)	2	109	68-129
Bromobenzene	mg/kg (ppm)	2	111	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	112	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	115	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	119	61-137
2-Chlorotoluene	mg/kg (ppm)	2	109	69-128
4-Chlorotoluene	mg/kg (ppm)	2	108	67-127
tert-Butylbenzene	mg/kg (ppm)	2	107	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	108	69-128
sec-Butylbenzene	mg/kg (ppm)	2	110	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	111	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	107	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	106	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	114	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	109	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	115	50-153
Naphthalene	mg/kg (ppm)	2	110	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	111	61-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402324-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2	<0.05	69	73	10-138	6
Chloroethane	mg/kg (ppm)	2	<0.5	70	70	10-176	0
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	80	83	10-160	4
Methylene chloride	mg/kg (ppm)	2	<0.5	82	85	10-156	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	79	81	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	81	85	19-140	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	81	84	25-135	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	83	86	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	83	87	10-156	5
Trichloroethene	mg/kg (ppm)	2	<0.02	83	84	21-139	1
Tetrachloroethene	mg/kg (ppm)	2	<0.025	81	86	20-133	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2	74	22-139
Chloroethane	mg/kg (ppm)	2	79	10-163
1,1-Dichloroethene	mg/kg (ppm)	2	87	47-128
Methylene chloride	mg/kg (ppm)	2	87	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	2	85	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	87	64-135
cis-1,2-Dichloroethene	mg/kg (ppm)	2	84	64-135
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	90	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	90	62-131
Trichloroethene	mg/kg (ppm)	2	85	63-139
Tetrachloroethene	mg/kg (ppm)	2	88	68-128

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Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401372-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	103	50-150
Chloroethane	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
Methylene chloride	ug/L (ppb)	10	<5	96	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	97	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	102	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	93	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	94	35-149
Tetrachloroethene	ug/L (ppb)	10	<1	104	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	105	90	64-142	15
Chloroethane	ug/L (ppb)	10	104	92	70-130	12
1,1-Dichloroethene	ug/L (ppb)	10	97	86	64-140	12
Methylene chloride	ug/L (ppb)	10	103	90	43-134	13
trans-1,2-Dichloroethene	ug/L (ppb)	10	102	90	70-130	12
1,1-Dichloroethane	ug/L (ppb)	10	104	93	70-130	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	90	70-130	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	102	97	70-130	5
1,1,1-Trichloroethane	ug/L (ppb)	10	97	87	70-130	11
Trichloroethene	ug/L (ppb)	10	94	88	70-130	7
Tetrachloroethene	ug/L (ppb)	10	102	95	70-130	7

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401329-12 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	74	78	28-125	5
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	81	83	10-192	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	78	79	10-163	1
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	79	84	45-128	6
Acenaphthene	mg/kg (ppm)	0.83	<0.01	76	81	36-125	6
Fluorene	mg/kg (ppm)	0.83	<0.01	81	85	48-121	5
Phenanthrene	mg/kg (ppm)	0.83	<0.01	76	84	46-122	10
Anthracene	mg/kg (ppm)	0.83	<0.01	79	88	30-144	11
Fluoranthene	mg/kg (ppm)	0.83	<0.01	85	93	50-150	9
Pyrene	mg/kg (ppm)	0.83	<0.01	79	80	40-134	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	81	87	50-150	7
Chrysene	mg/kg (ppm)	0.83	<0.01	83	88	50-150	6
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	91	97	50-150	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	84	89	50-150	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	90	95	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	85	91	40-140	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	80	86	41-136	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	75	79	29-139	5

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	87	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	95	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	90	63-113
Acenaphthylene	mg/kg (ppm)	0.83	93	70-130
Acenaphthene	mg/kg (ppm)	0.83	90	66-112
Fluorene	mg/kg (ppm)	0.83	95	67-117
Phenanthrene	mg/kg (ppm)	0.83	93	70-130
Anthracene	mg/kg (ppm)	0.83	97	70-130
Fluoranthene	mg/kg (ppm)	0.83	103	70-130
Pyrene	mg/kg (ppm)	0.83	88	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	94	70-130
Chrysene	mg/kg (ppm)	0.83	98	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	105	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	99	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	106	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	98	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	98	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	65-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401358-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	69	68	28-125	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	73	74	10-192	1
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	69	70	10-163	1
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	71	72	45-128	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	70	71	36-125	1
Fluorene	mg/kg (ppm)	0.83	<0.01	73	74	48-121	1
Phenanthrene	mg/kg (ppm)	0.83	<0.01	72	71	46-122	1
Anthracene	mg/kg (ppm)	0.83	<0.01	75	73	30-144	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	79	80	50-150	1
Pyrene	mg/kg (ppm)	0.83	<0.01	70	69	40-134	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	75	75	50-150	0
Chrysene	mg/kg (ppm)	0.83	<0.01	78	77	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	84	83	50-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	78	77	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	79	80	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	95	89	40-140	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	91	88	41-136	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	87	85	29-139	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	73	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	78	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	74	63-113
Acenaphthylene	mg/kg (ppm)	0.83	77	70-130
Acenaphthene	mg/kg (ppm)	0.83	76	66-112
Fluorene	mg/kg (ppm)	0.83	79	67-117
Phenanthrene	mg/kg (ppm)	0.83	77	70-130
Anthracene	mg/kg (ppm)	0.83	79	70-130
Fluoranthene	mg/kg (ppm)	0.83	83	70-130
Pyrene	mg/kg (ppm)	0.83	73	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	79	70-130
Chrysene	mg/kg (ppm)	0.83	82	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	87	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	80	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	86	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	94	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	91	65-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	85	84	57-107	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	93	93	63-112	0
1-Methylnaphthalene	mg/kg (ppm)	0.83	88	88	63-113	0
Acenaphthylene	mg/kg (ppm)	0.83	89	89	70-130	0
Acenaphthene	mg/kg (ppm)	0.83	88	87	66-112	1
Fluorene	mg/kg (ppm)	0.83	93	92	67-117	1
Phenanthrene	mg/kg (ppm)	0.83	85	87	70-130	2
Anthracene	mg/kg (ppm)	0.83	88	90	70-130	2
Fluoranthene	mg/kg (ppm)	0.83	96	97	70-130	1
Pyrene	mg/kg (ppm)	0.83	83	83	70-130	0
Benz(a)anthracene	mg/kg (ppm)	0.83	89	91	70-130	2
Chrysene	mg/kg (ppm)	0.83	91	93	70-130	2
Benzo(a)pyrene	mg/kg (ppm)	0.83	100	102	68-120	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	95	96	67-128	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	98	100	70-130	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	103	96	67-129	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	97	91	67-128	6
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	93	86	65-130	8

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	98	96	35-146	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401358

SAMPLE CHAIN OF CUSTODY

01/29/24 VW5/JS/C4/N3

Page # 1 of

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB, EDC, MTBE	Lead, Arsenic	TOC	EPH/VPH	X per HG 1/29/24 ME Notes A-per HG 01/31/24 ME
HA-1-S1	01 A-F	1/26	0915	S	6	X	X			X	X		X	X			~~Hold~~
HA-1-S2	02		0935 ~~1045~~			X	X			X	X		X	X	X		~~Analyze~~
HA-1-S3	03		~~1045~~ 1055			X	X			X	X		X	X			
HA-1-S4	04		~~1055~~ 1105			X	X			X	X		X	X	X		Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-1-S5	05		~~1105~~ 1430			Hold											
HA-1-S6	06		1430			X	X			X	X		X	X	X	A	
HA-1-DUP	07		1500			X	X			X	X		X	X	X	A	
HA-2-S1.5	08	1/24	1305			X	X			X	X		X	X			
HA-2-S2	09		1320			X	X			X	X		X	X			
HA-2-S3	10		1340			X	X			X	X		X	X	X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew DalCalvo	HA	1/29/24	820
Received by:	Erik Young	HA	1/29/24	820
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401358

SAMPLE CHAIN OF CUSTODY

01/29/24 VW5/ J5/ C4/ N3

Page # 2 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email ~~Heather~~ HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	EPH/VPH ~~PCBs EPA 8082~~	EDB, EDC, MTBE	Lead, Arsenic	cVOCs	TOC	Notes
HA-2-S4	11 A-F	1/24	1445	S	6	X	X			X	X		X	X			~~Hold for~~
HA-2-S5	12		1455			X	X			X	X		X	X		X	~~Analysis~~
HA-2-S6	13		1505			Hold											Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-2-S7	14	1/25	1045			X	X			X	X	A	X	X		X	
HA-2-S8	15		1055			Hold	A	A		A	A		A	A			
HA-2-S9	16		1500			X	X	X							X		
HA-2-S10	17		1510			X	X	X							X		
HA-3-S1	18	1/23	1040			X	X			X	X		X	X			
HA-3-S2	19		1100			X	X			X	X		X	X			
HA-3-S3	20		1230			X	X			X	X		X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/29/24	820
Received by:	Eric Young	RAD	1/29/24	820
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
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401358

SAMPLE CHAIN OF CUSTODY 01/29/24 VW5/J5/C4/N3

Page # 3 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	EPH/VPH ~~PCBs EPA 8082~~	EDB, EDC, MTBE	TOC	cVOCs	TSS	Lead, Arsenic	Notes
HA-3-54	21 A-F		1240	S	6	X	X			X	X		X				X	old for
HA-3-55	22		1250			Hold												Analysis
HA-3-56	23		1640			X	X			X	X	A	X				X	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/VPH follow-ups
MW-23D-53	24	1/22	1200			X	X			X	X		X				X	
MW-23D-54	25		1210			X	X			X	X		X	X			X	
MW-23D-55	26		1220			X	X	X							X			
MW-23D-56	27		1510			X	X			X	X	A	X	X			X	
MW-23D-DUP	28		1530			X	X			X	X		X	X			X	
HA-1-GW	29 A/H	1/26	1200	W	8	X	X	X							X	X		
HA-2-GW	30 A/H	1/24	1600		8	X	X	X							X	X		

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/24/24	820
Received by:	Eric Flown	F&B	1/29/24	830
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401358

SAMPLE CHAIN OF CUSTODY

01/29/24

VW5/J5/C4/~~V~~ N3/~~4~~

Page # 4 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ~~/~~ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

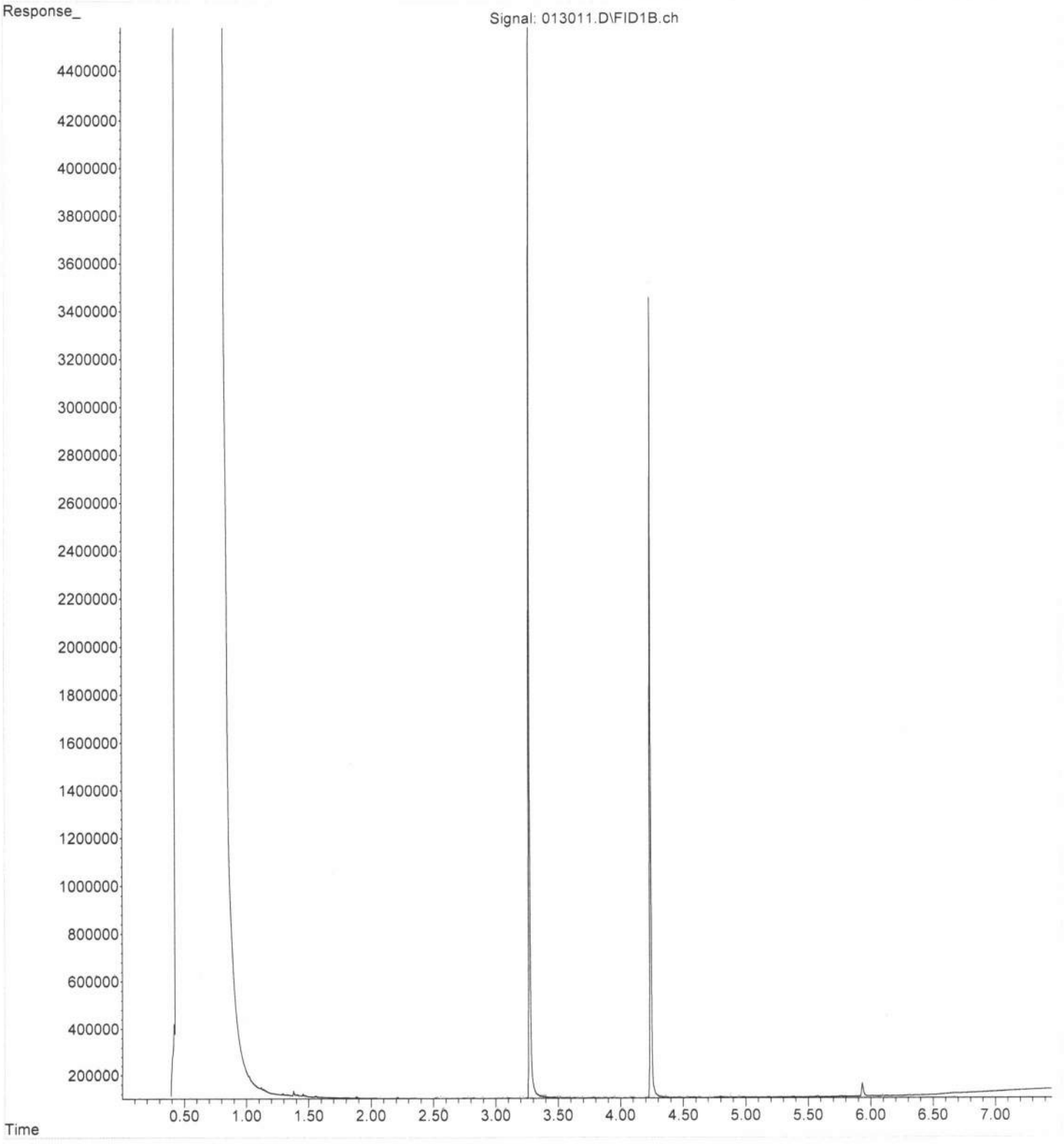
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS				Notes
HA-3-GW	31 A-G	1/23	1400	W	8	X	X	X					X				~~Hold for~~
Dup-01	32 A-H	1/23	1430	W	8	X	X	X					X				~~Analysis~~
																	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups

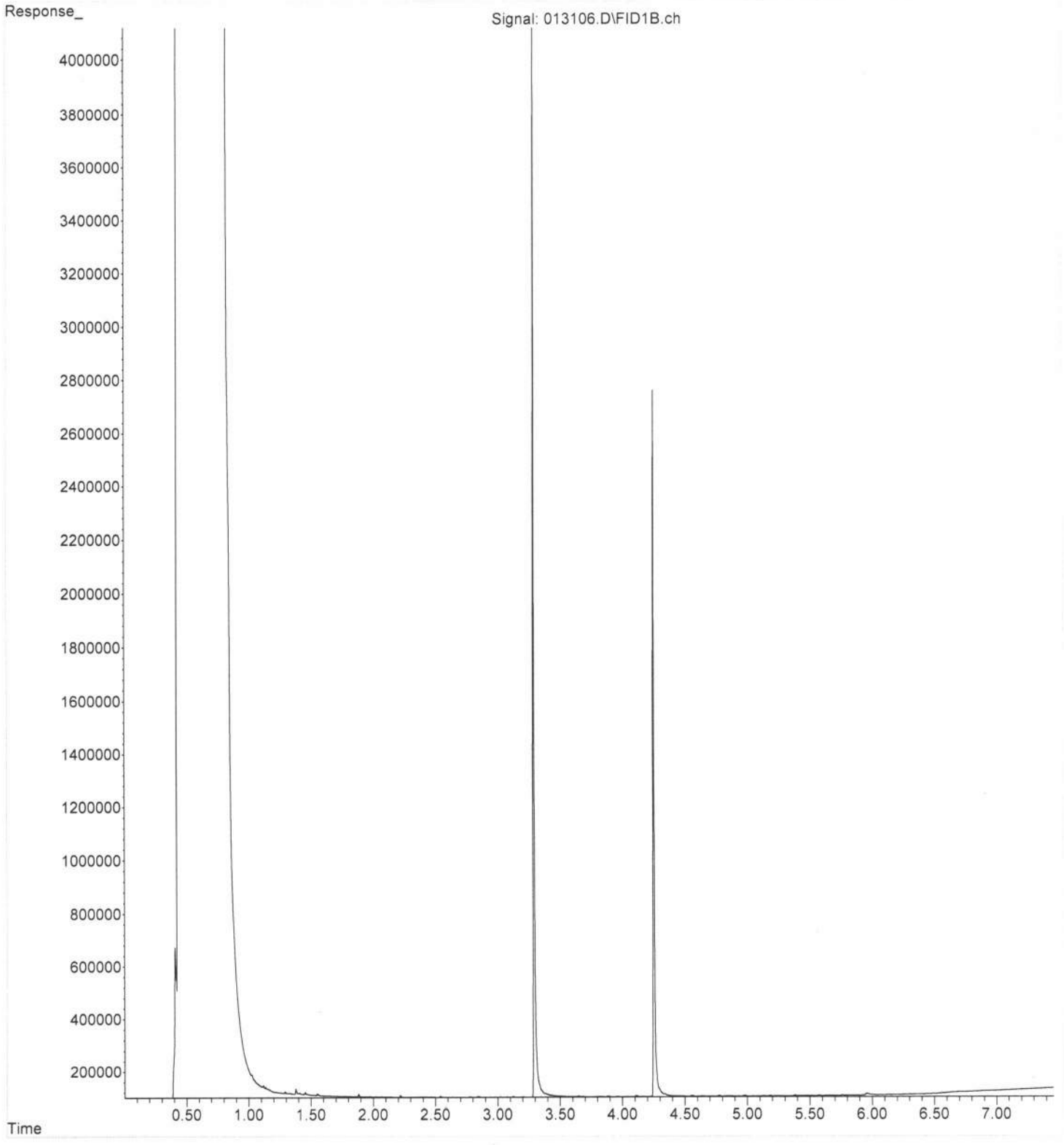
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Valcahan	HA	1/24/24	0820
Received by:	Eric Jones	F&B	1/29/24	0820
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

File :P:\Proc_GC13\01-30-24\013011.D
Operator : TL
Acquired : 30 Jan 2024 10:57 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-01
Misc Info : ERR
Vial Number: 12

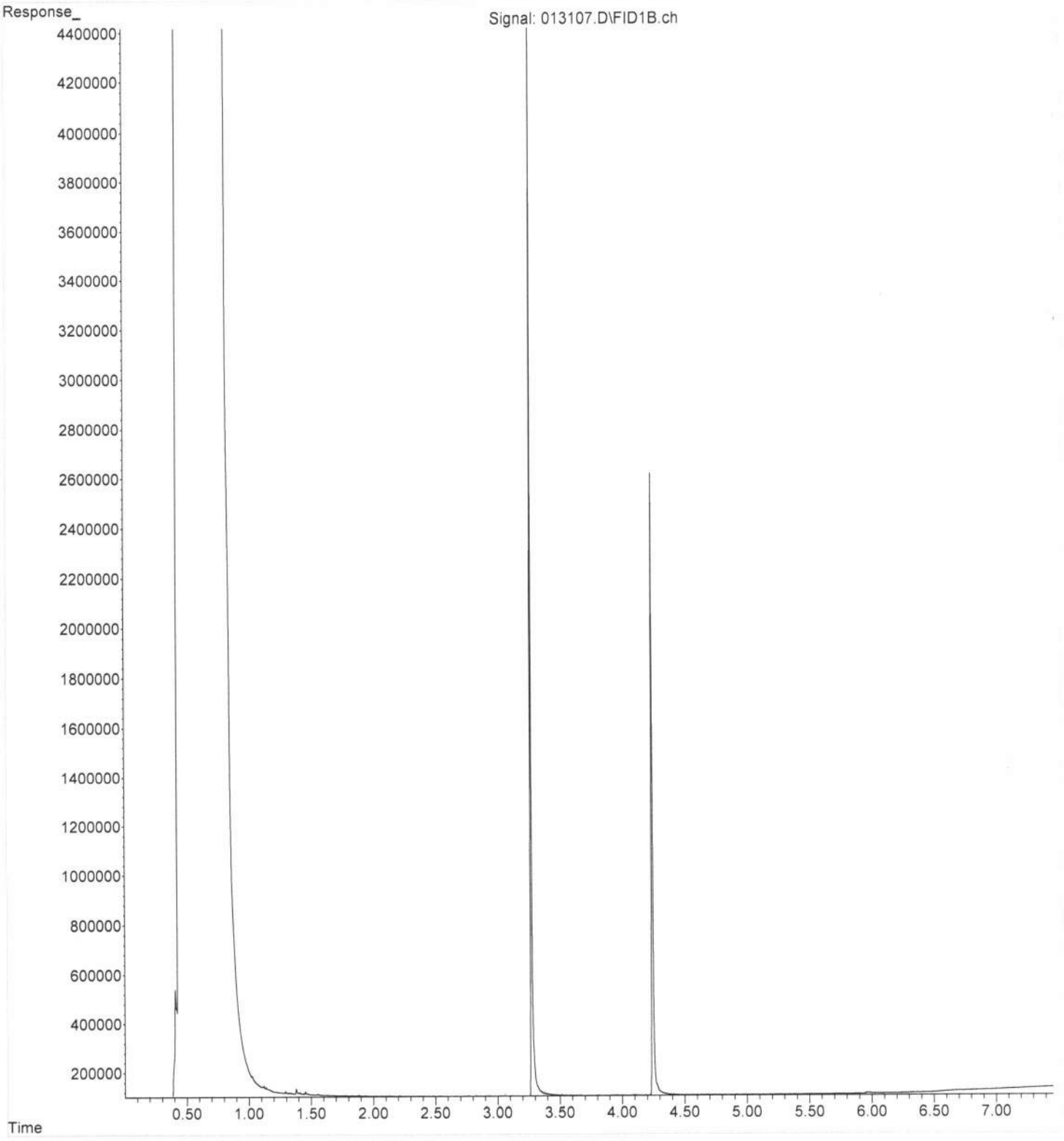


File :P:\Proc_GC13\01-31-24\013106.D
Operator : TL
Acquired : 31 Jan 2024 08:55 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-02
Misc Info : ERR
Vial Number: 6

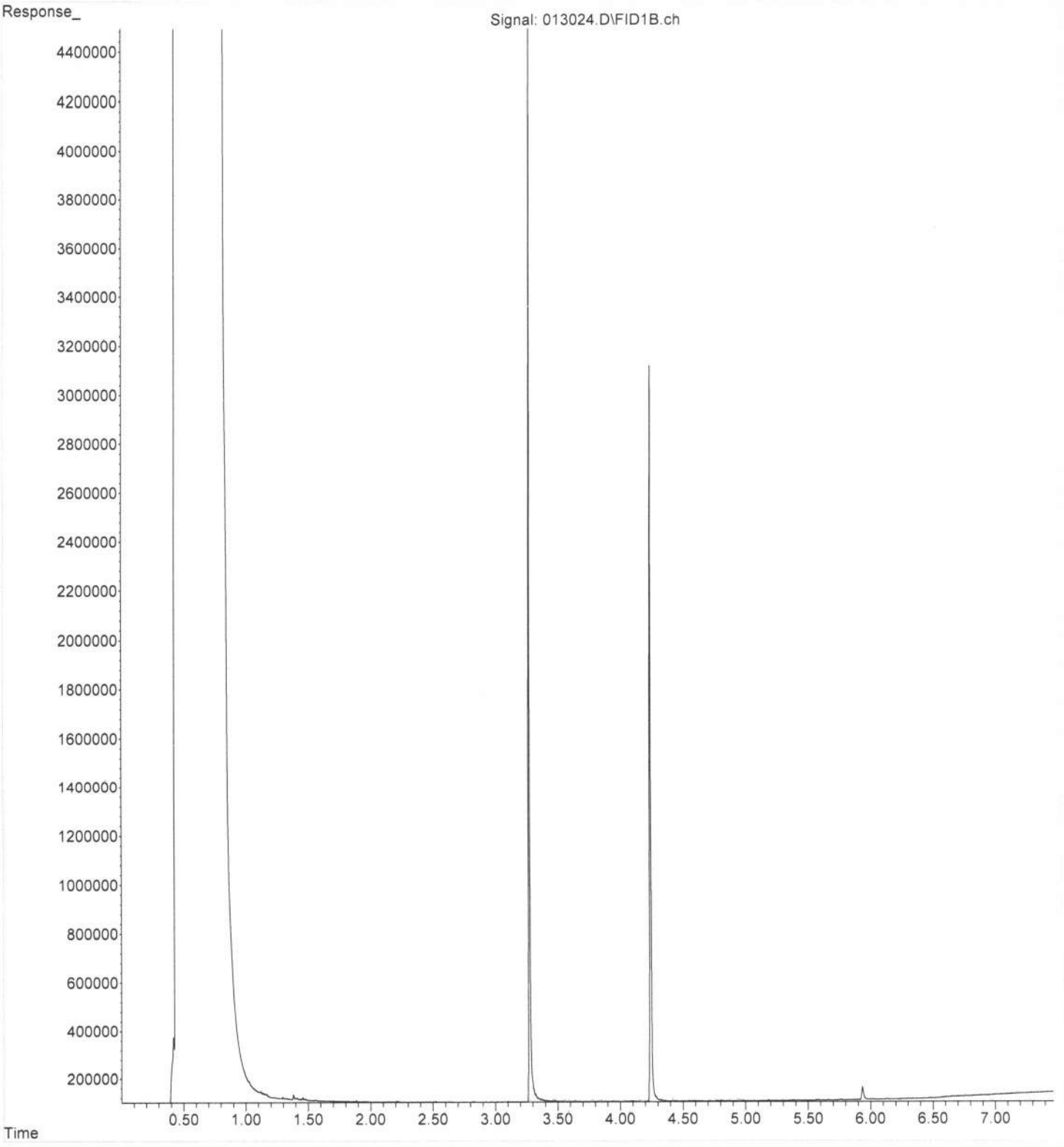


File :P:\Proc_GC13\01-31-24\013107.D
Operator : TL
Acquired : 31 Jan 2024 09:06 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-03
Misc Info :
Vial Number: 7

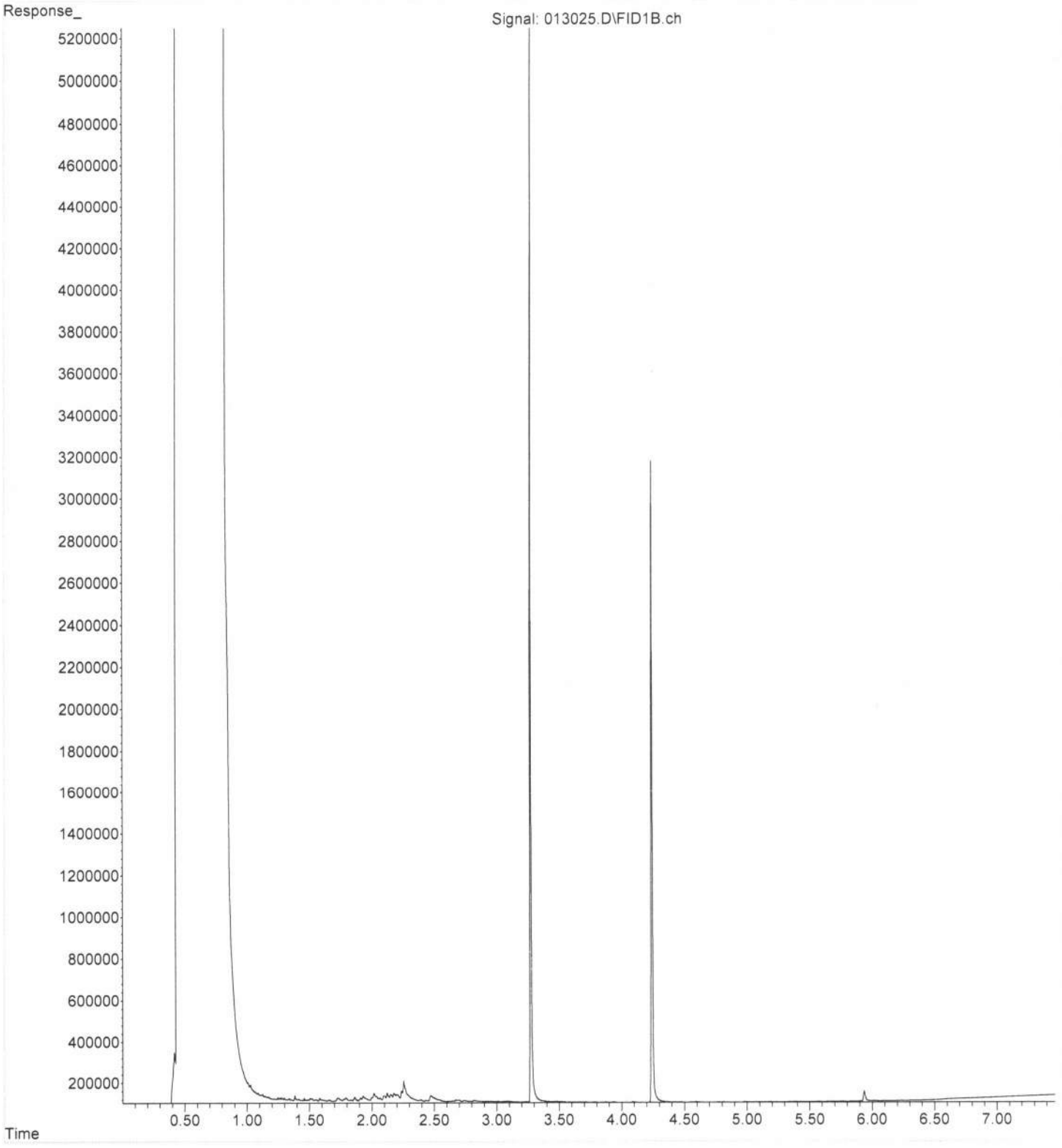
ERR



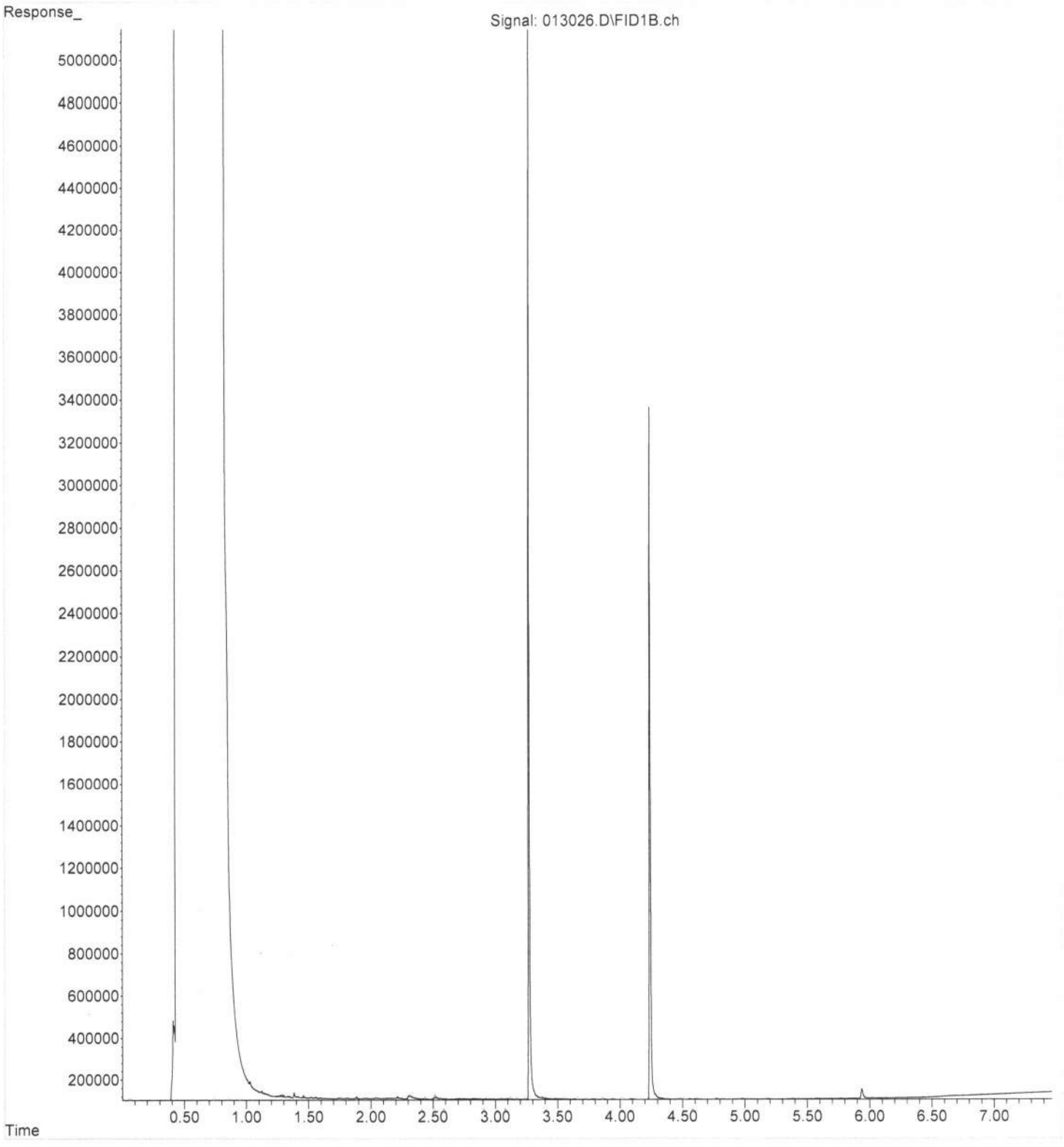
File :P:\Proc_GC13\01-30-24\013024.D
Operator : TL
Acquired : 30 Jan 2024 01:22 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-04
Misc Info : ERR
Vial Number: 15



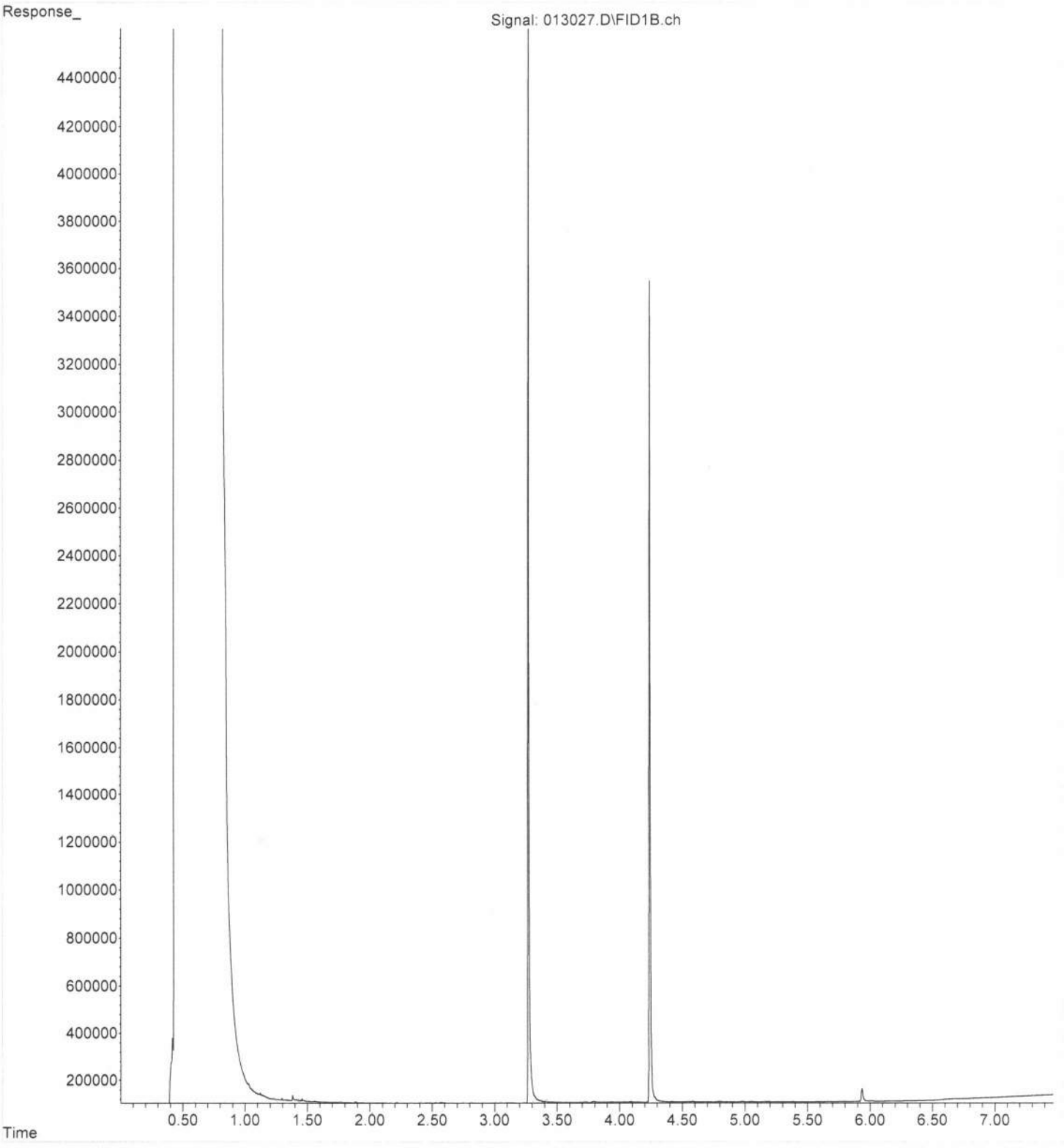
File :P:\Proc_GC13\01-30-24\013025.D
Operator : TL
Acquired : 30 Jan 2024 01:33 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-06
Misc Info : ERR
Vial Number: 16



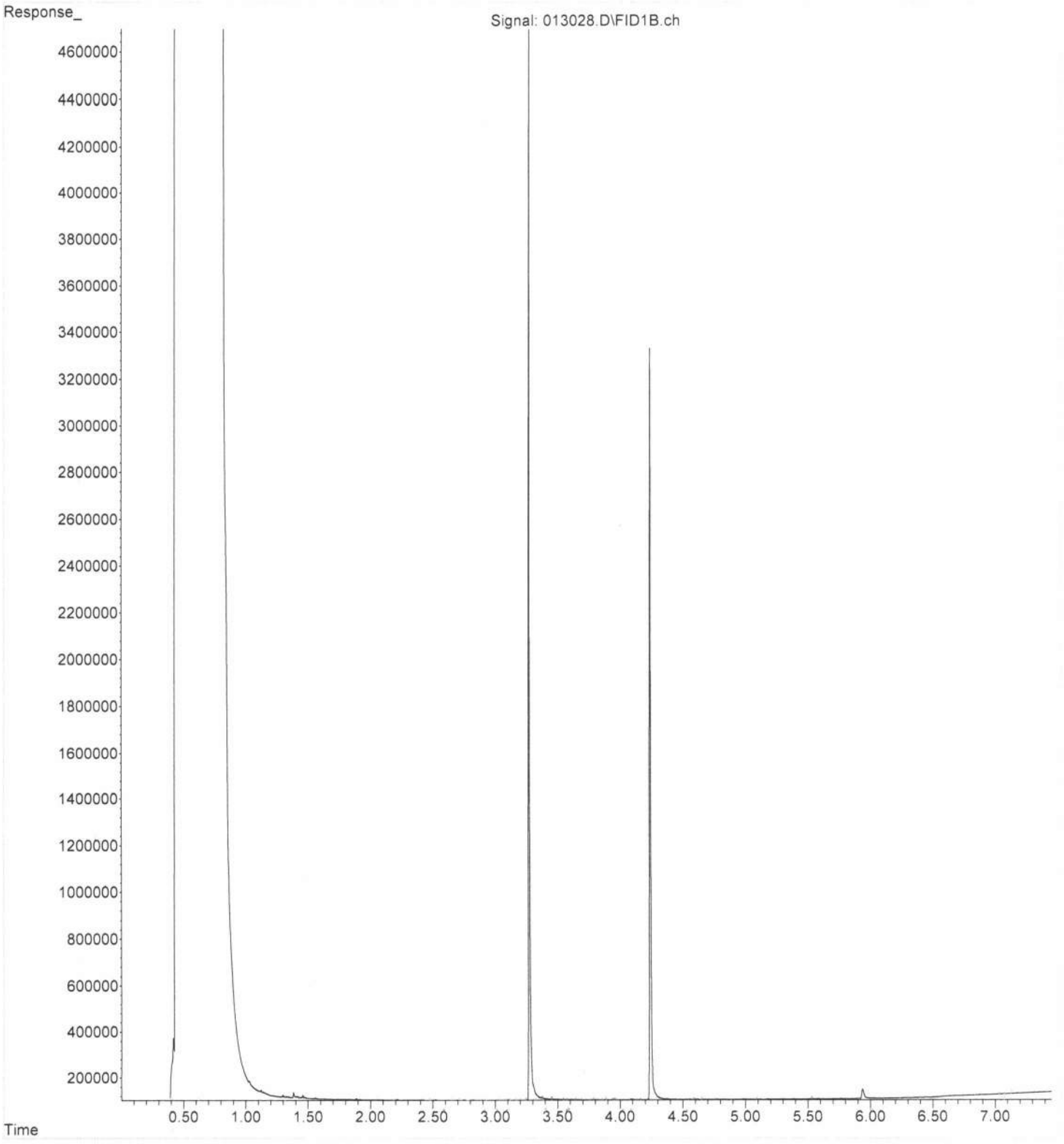
File :P:\Proc_GC13\01-30-24\013026.D
Operator : TL
Acquired : 30 Jan 2024 01:45 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-07
Misc Info : ERR
Vial Number: 17



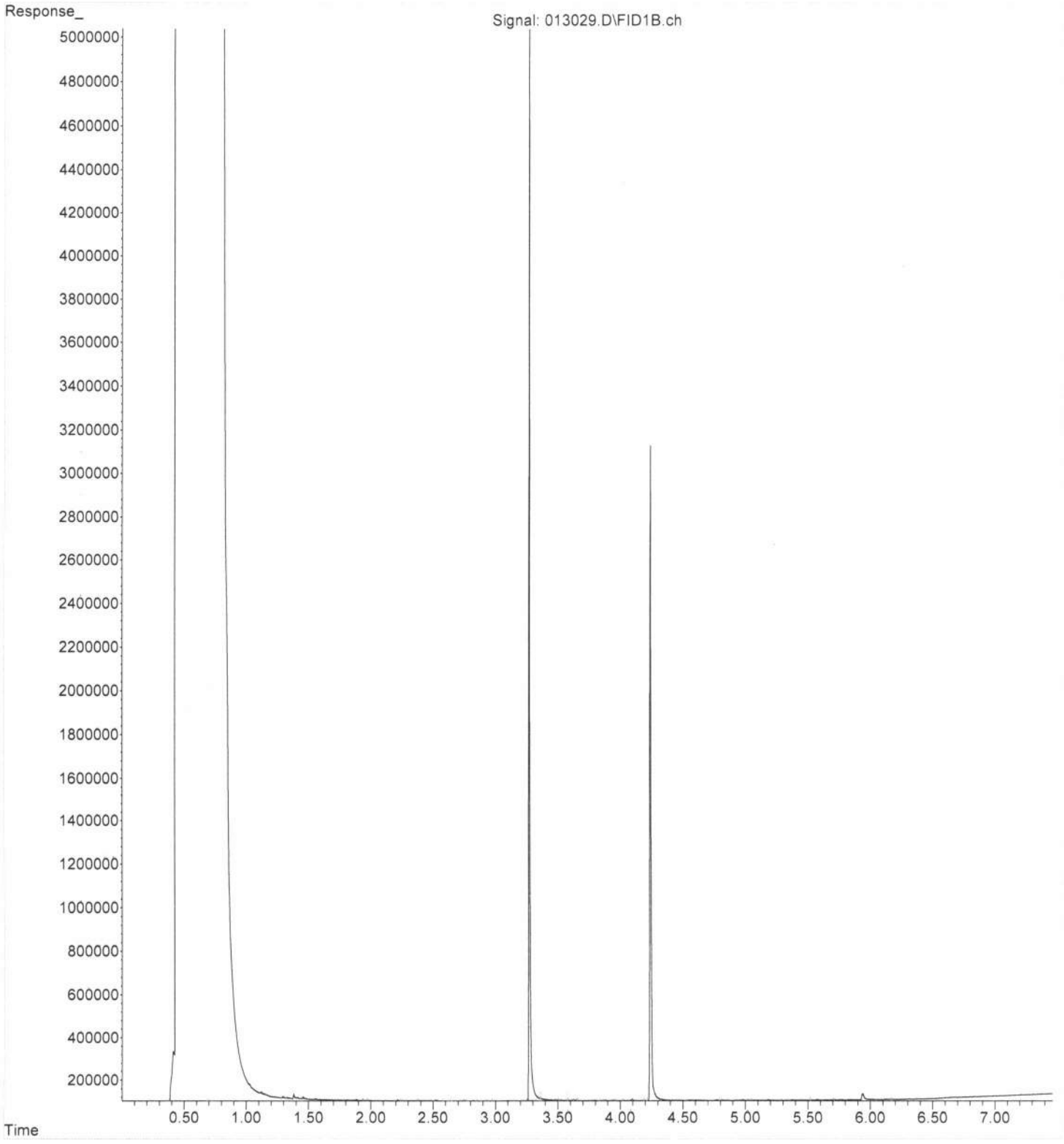
File :P:\Proc_GC13\01-30-24\013027.D
Operator : TL
Acquired : 30 Jan 2024 01:56 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-08
Misc Info : ERR
Vial Number: 18



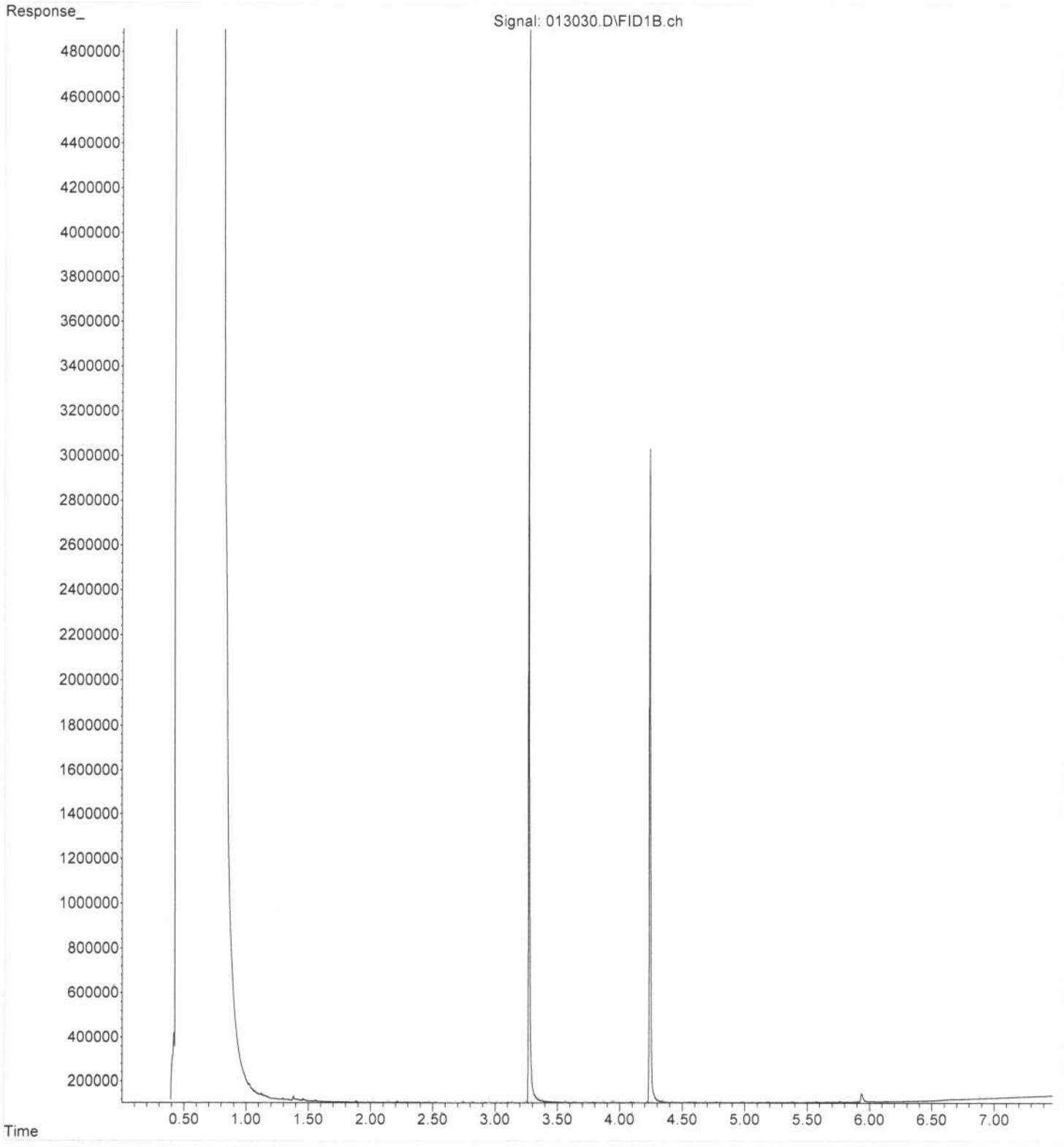
File :P:\Proc_GC13\01-30-24\013028.D
Operator : TL
Acquired : 30 Jan 2024 02:07 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-09
Misc Info : ERR
Vial Number: 19



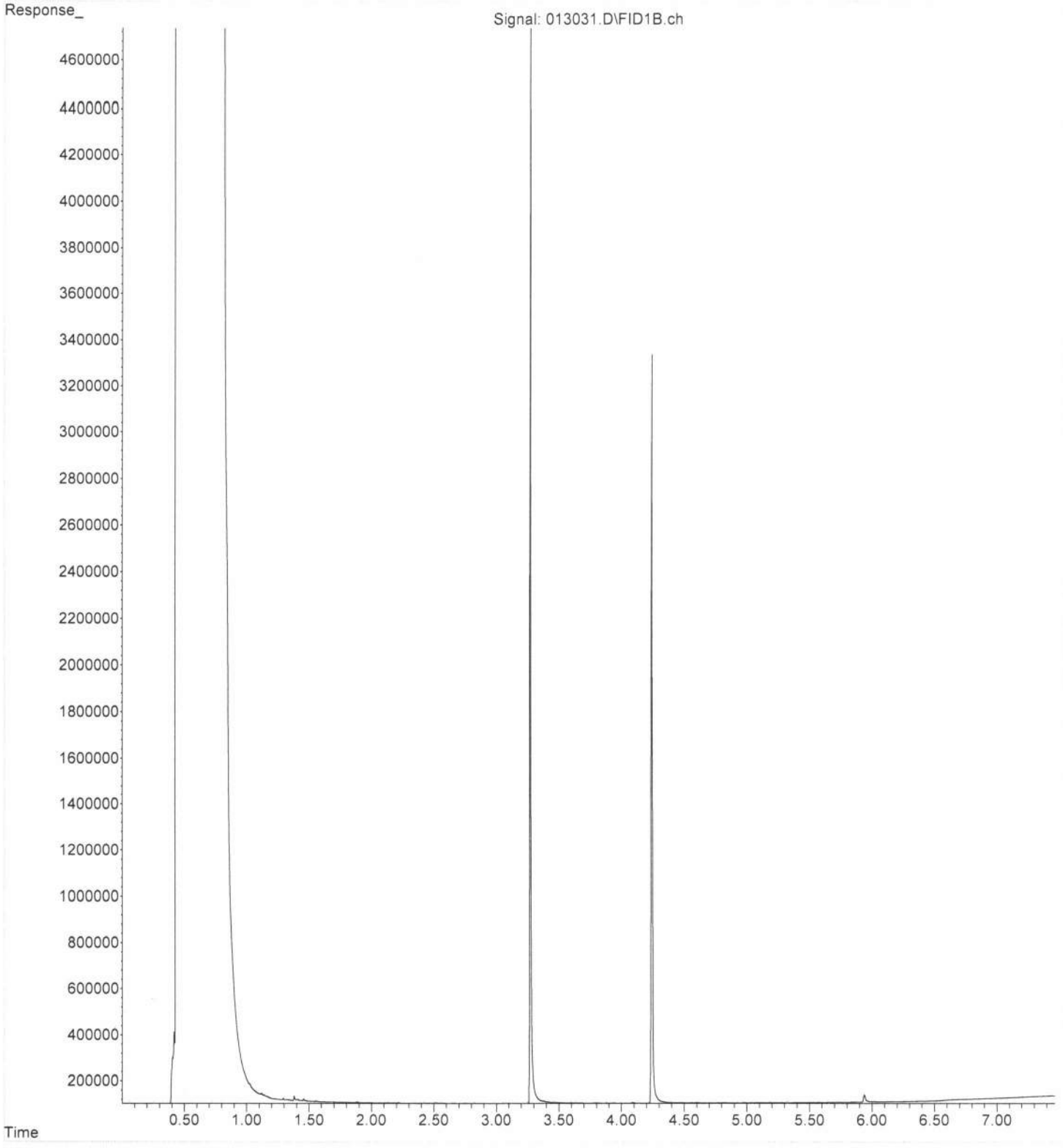
File :P:\Proc_GC13\01-30-24\013029.D
Operator : TL
Acquired : 30 Jan 2024 02:18 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-10
Misc Info : ERR
Vial Number: 20



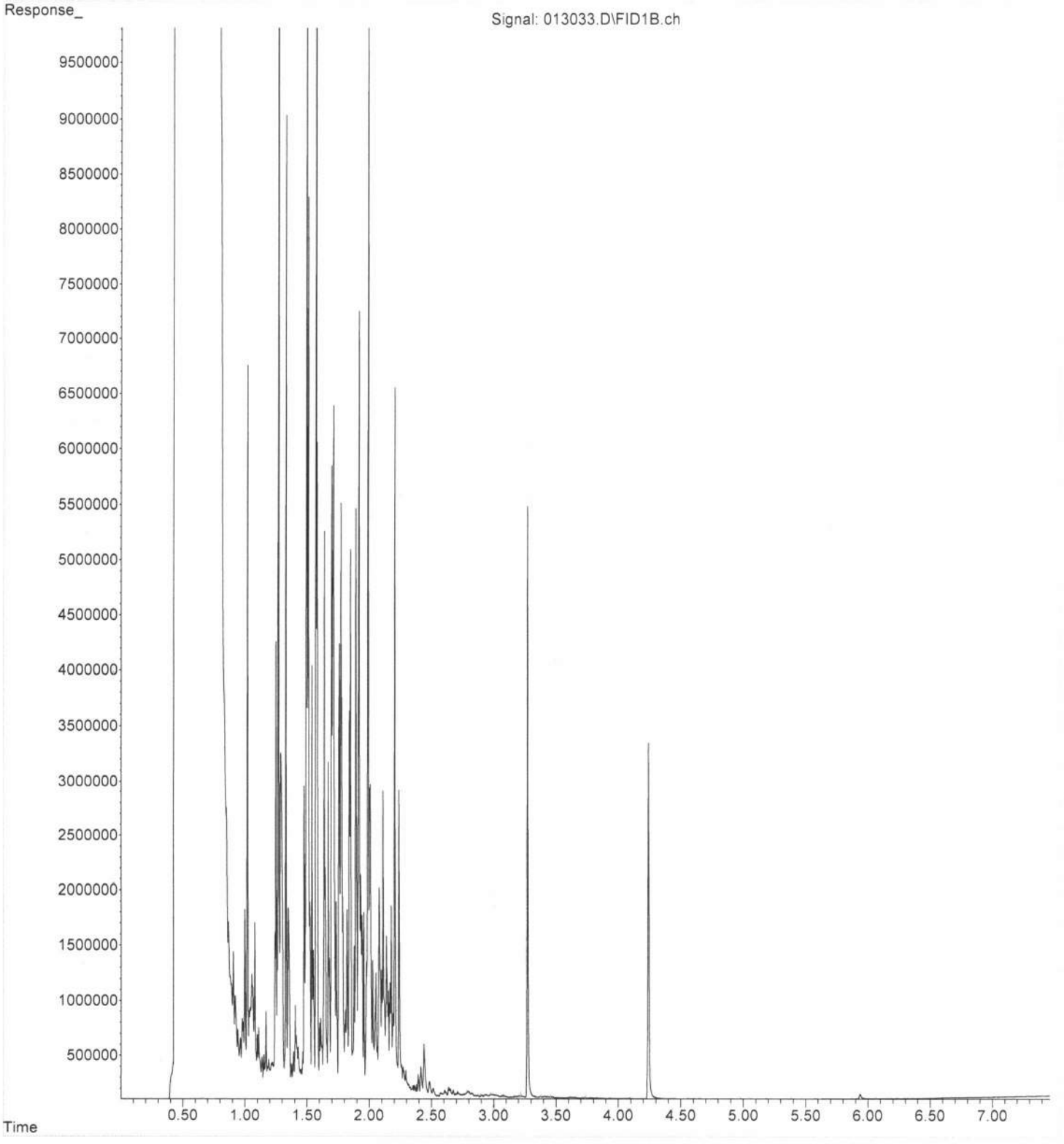
File :P:\Proc_GC13\01-30-24\013030.D
Operator : TL
Acquired : 30 Jan 2024 02:29 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-11
Misc Info : ERR
Vial Number: 21



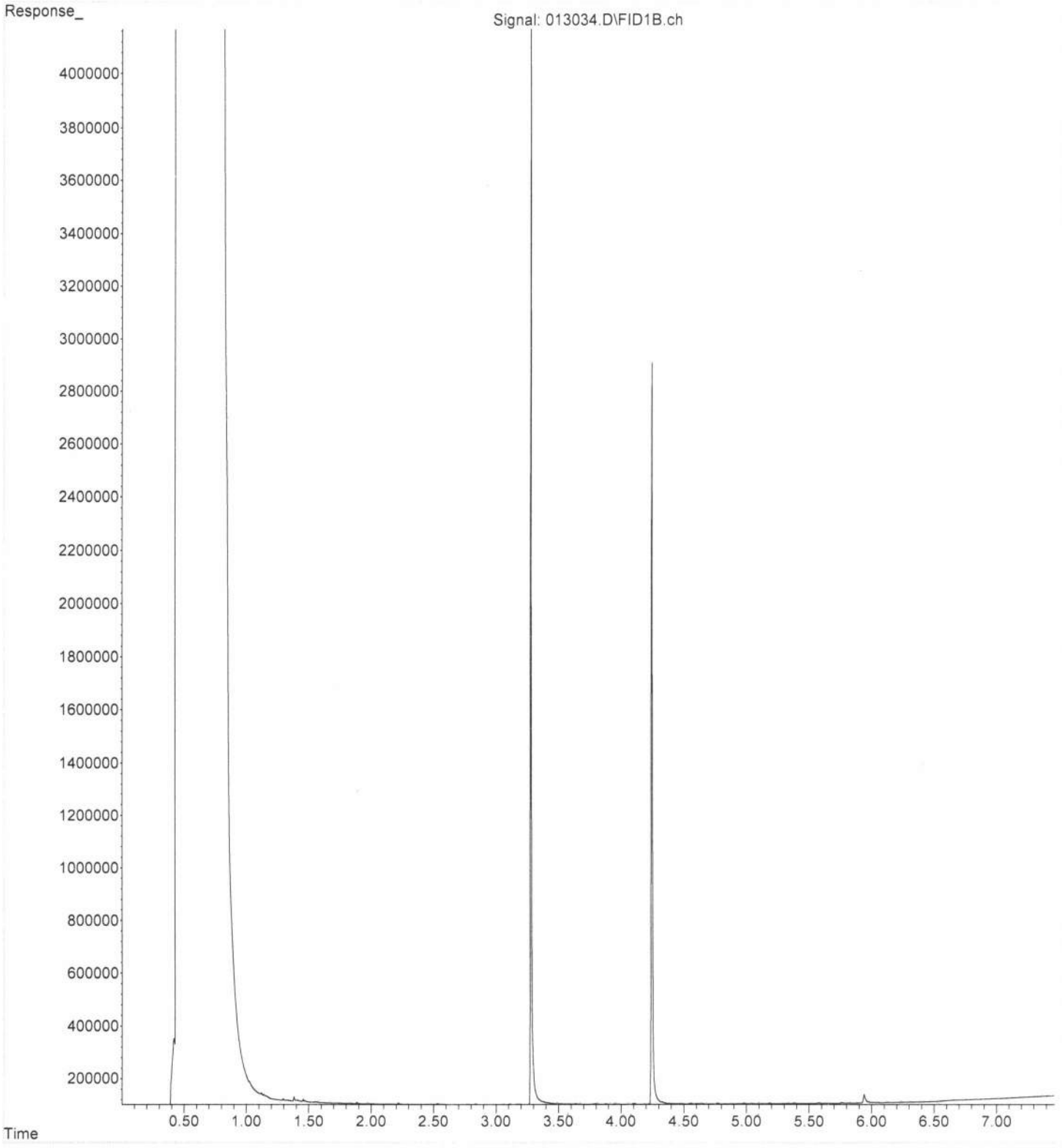
File :P:\Proc_GC13\01-30-24\013031.D
Operator : TL
Acquired : 30 Jan 2024 02:41 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-12
Misc Info : ERR
Vial Number: 22



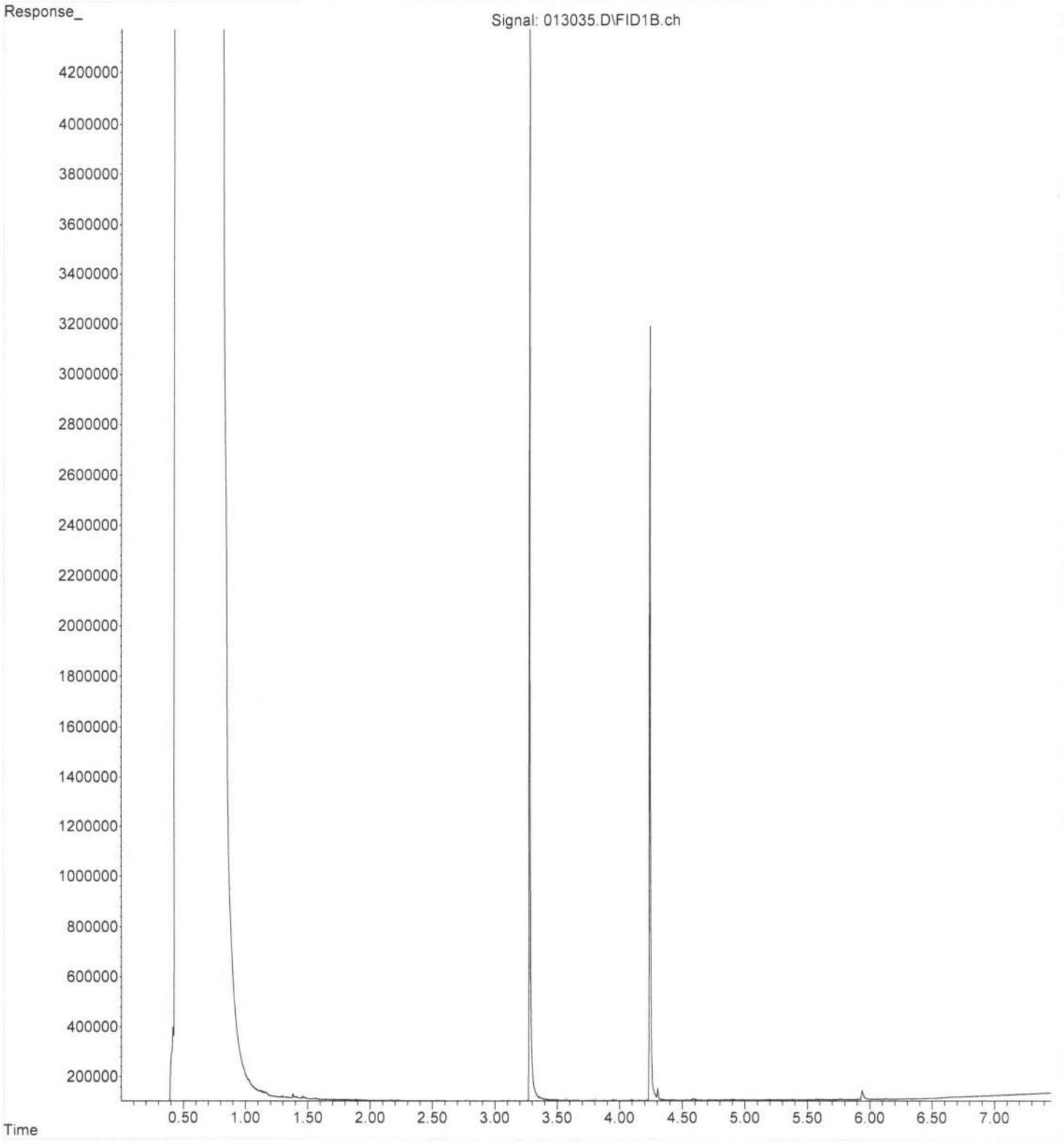
File :P:\Proc_GC13\01-30-24\013033.D
Operator : TL
Acquired : 30 Jan 2024 03:03 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-14
Misc Info : ERR
Vial Number: 23



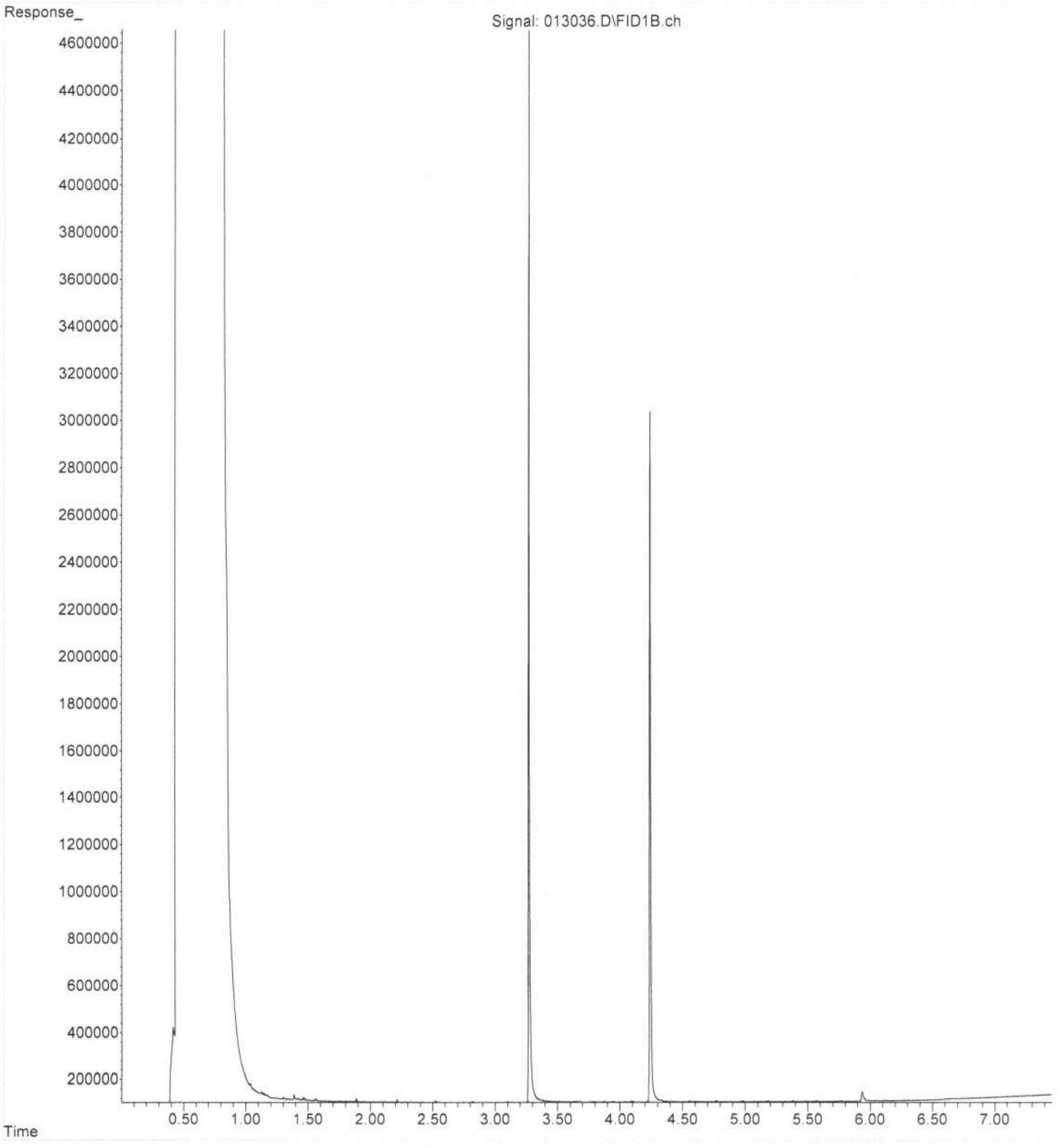
File :P:\Proc_GC13\01-30-24\013034.D
Operator : TL
Acquired : 30 Jan 2024 03:14 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-16
Misc Info : ERR
Vial Number: 24



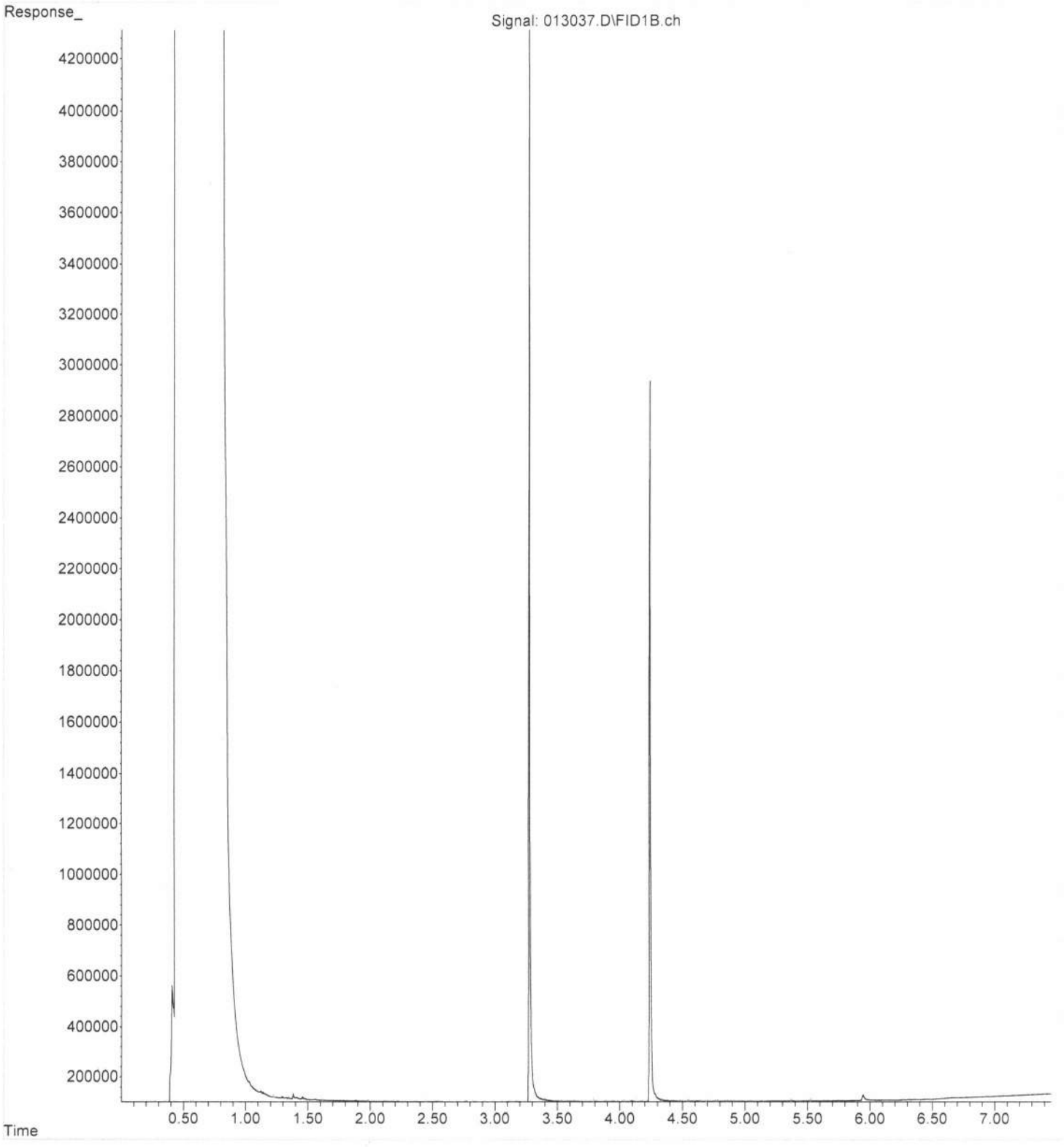
File :P:\Proc_GC13\01-30-24\013035.D
Operator : TL
Acquired : 30 Jan 2024 03:25 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-17
Misc Info : ERR
Vial Number: 25



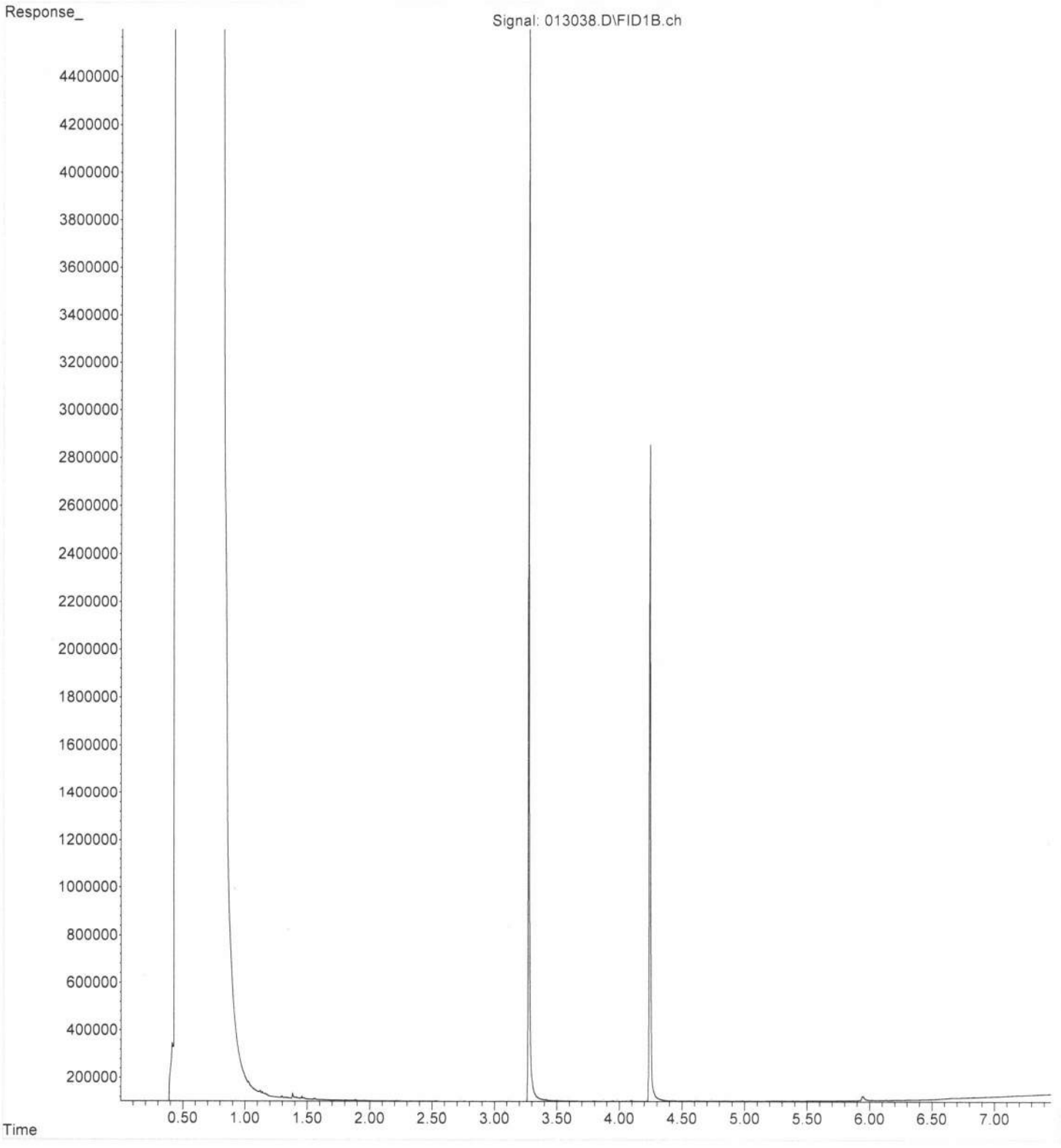
File :P:\Proc_GC13\01-30-24\013036.D
Operator : TL
Acquired : 30 Jan 2024 03:35 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-18
Misc Info : ERR
Vial Number: 26



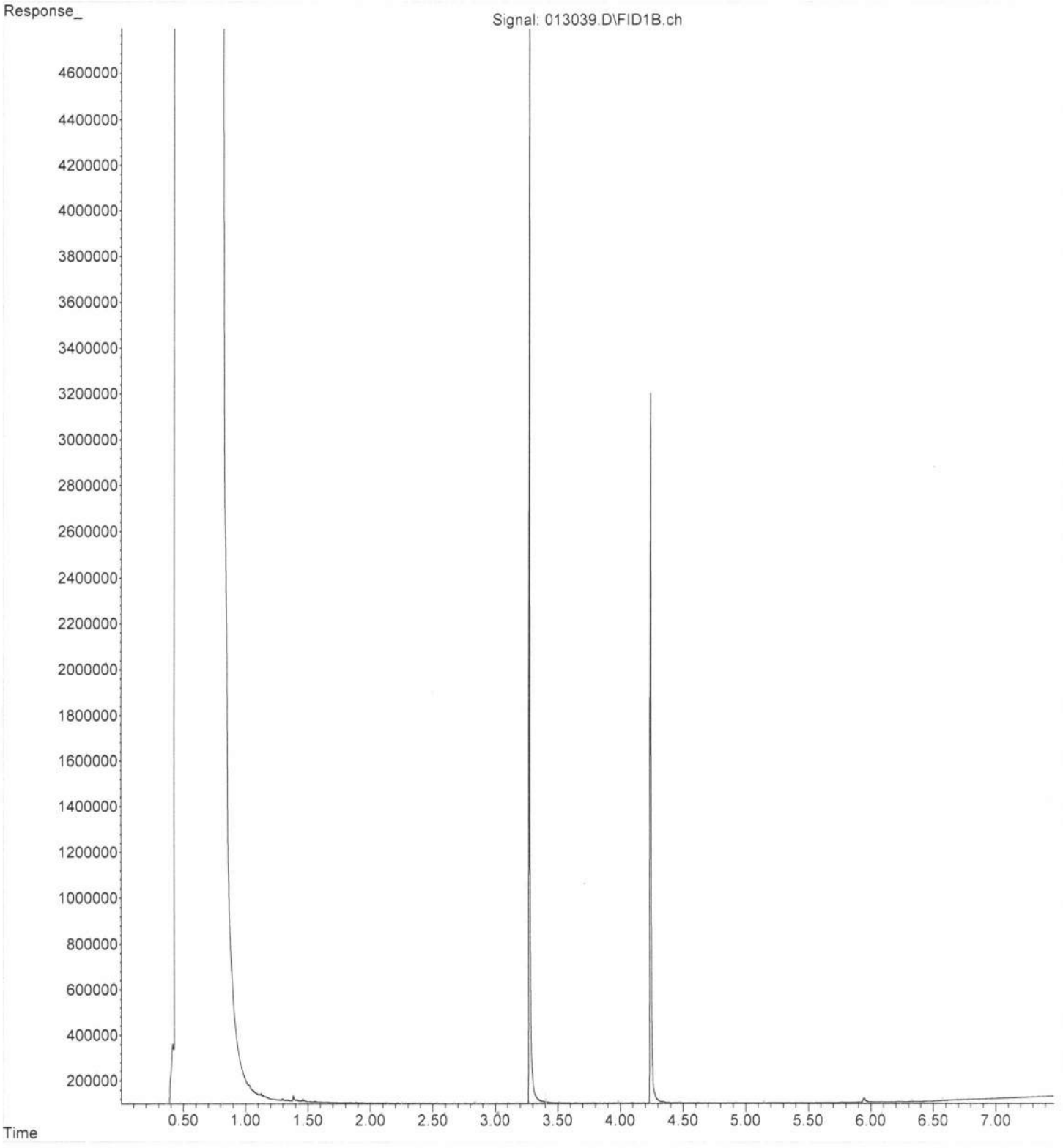
File :P:\Proc_GC13\01-30-24\013037.D
Operator : TL
Acquired : 30 Jan 2024 03:47 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-19
Misc Info : ERR
Vial Number: 27



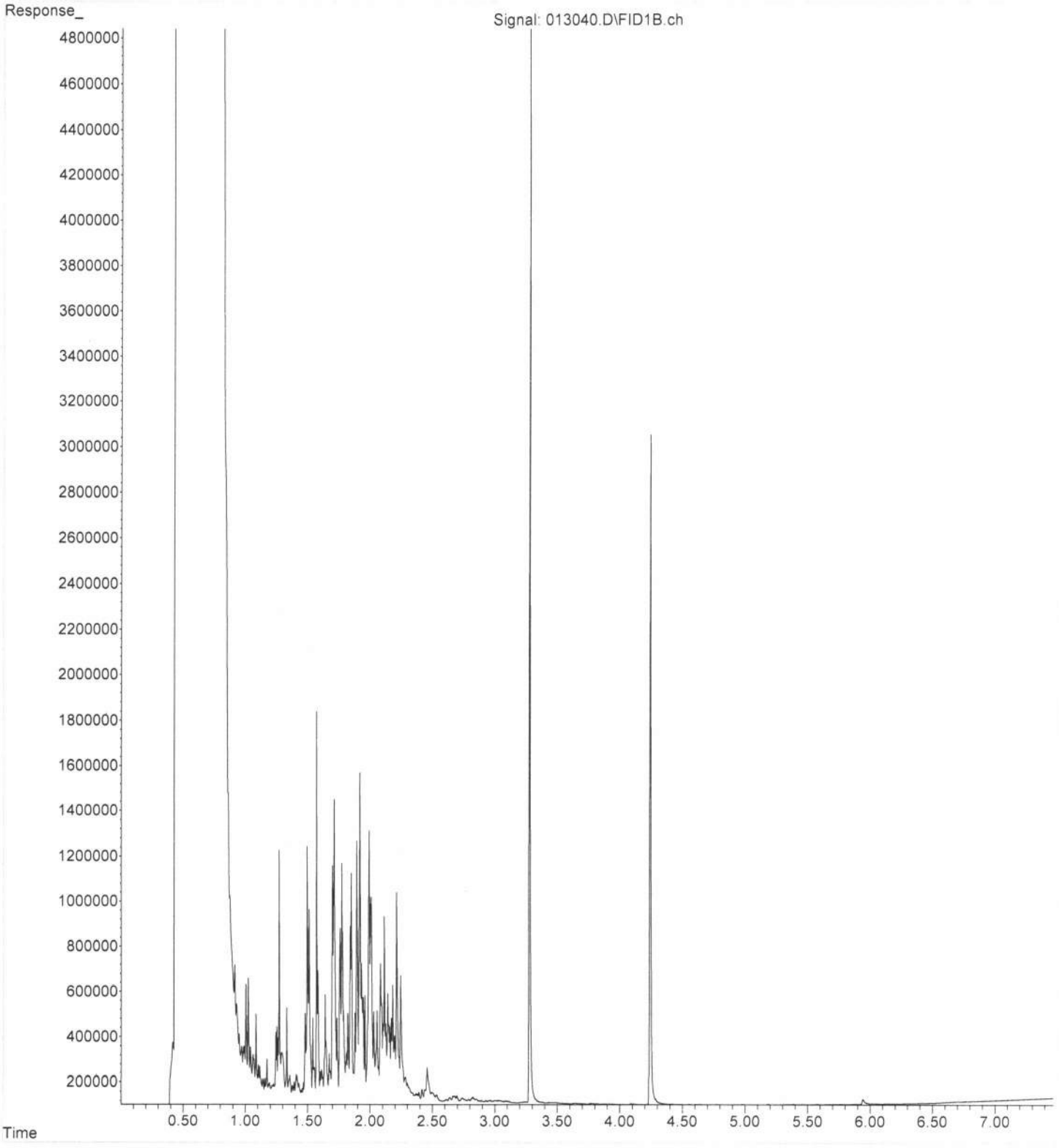
File :P:\Proc_GC13\01-30-24\013038.D
Operator : TL
Acquired : 30 Jan 2024 03:58 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-20
Misc Info : ERR
Vial Number: 28



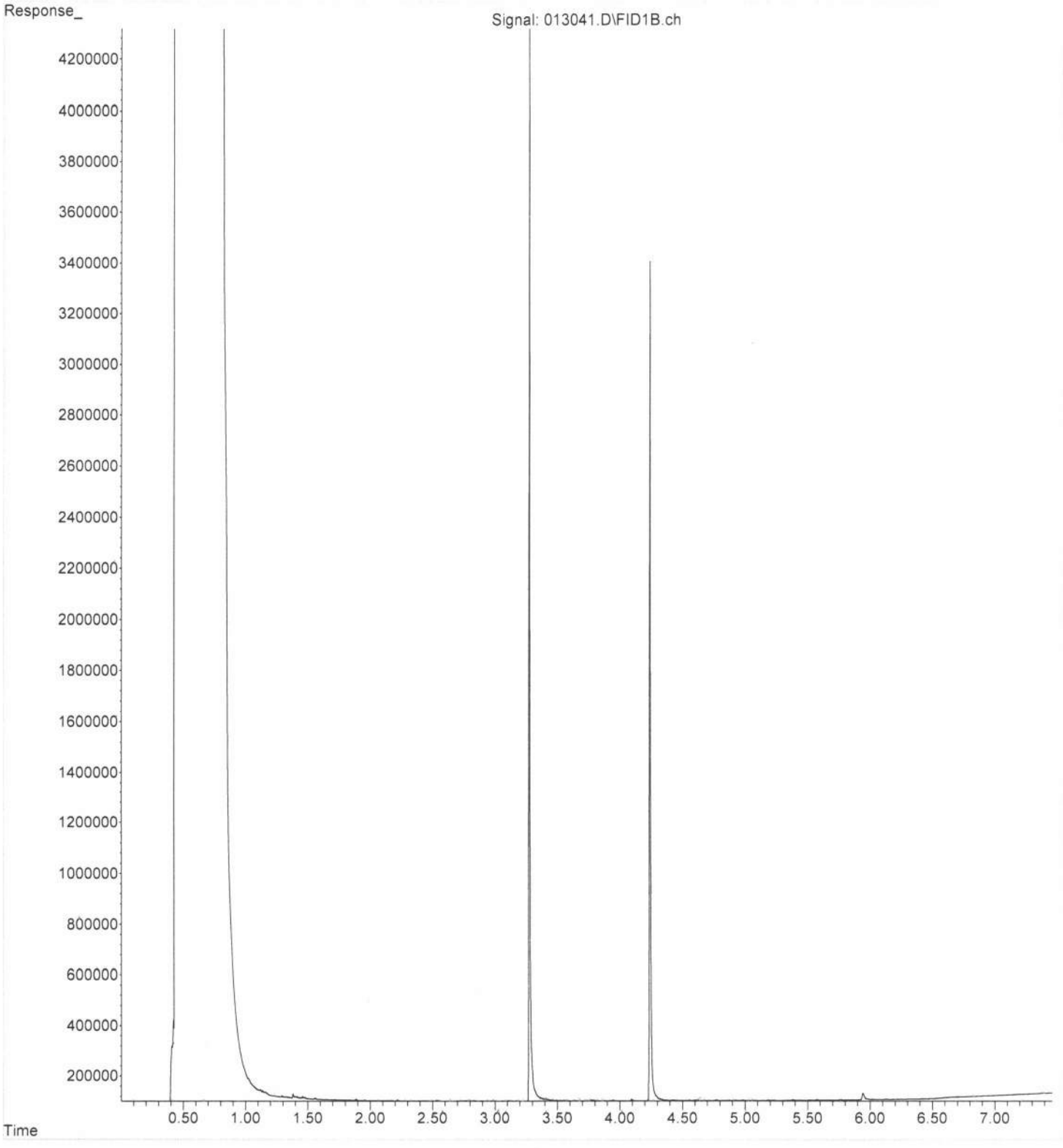
File :P:\Proc_GC13\01-30-24\013039.D
Operator : TL
Acquired : 30 Jan 2024 04:09 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-21
Misc Info : ERR
Vial Number: 29



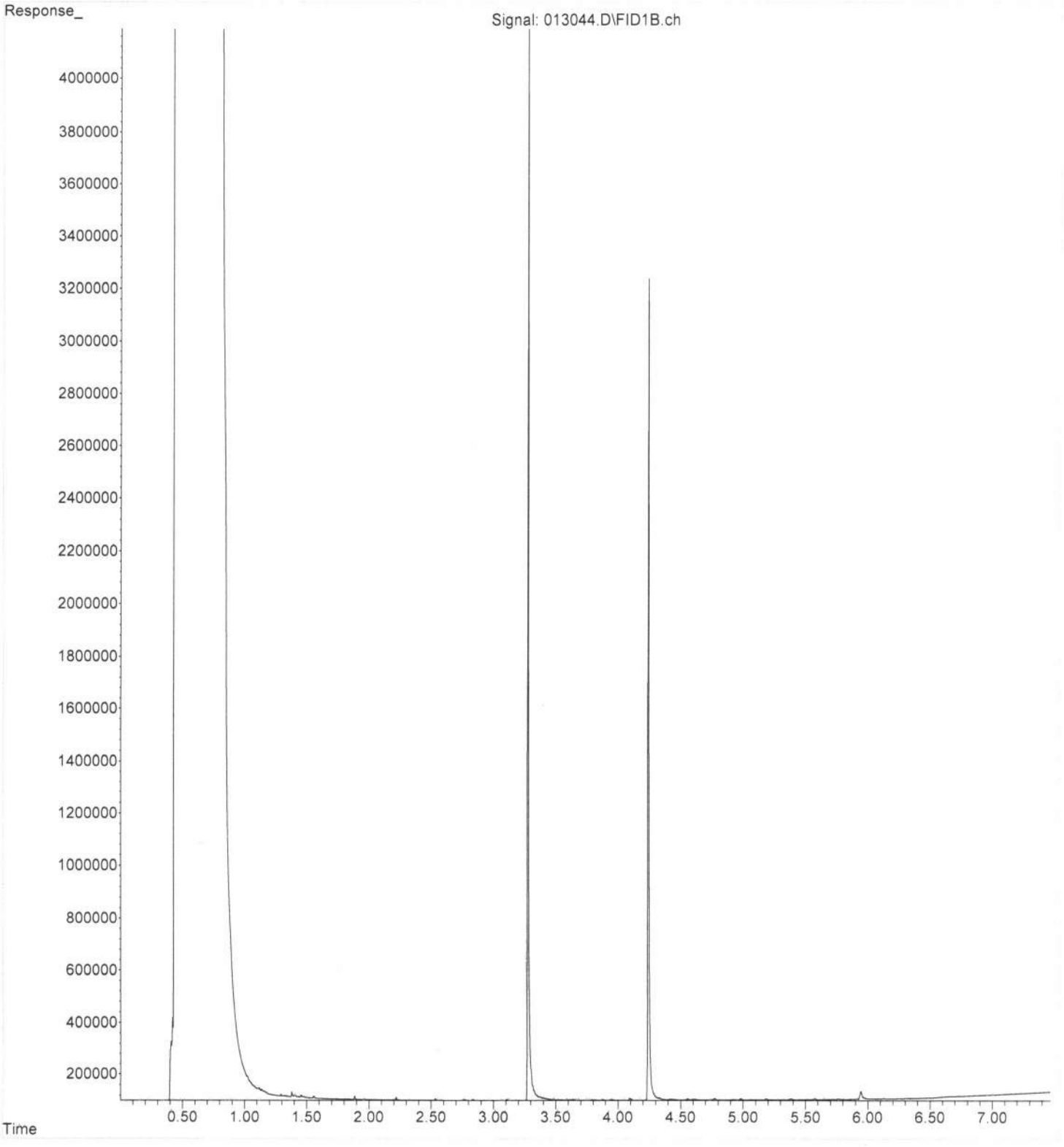
File :P:\Proc_GC13\01-30-24\013040.D
Operator : TL
Acquired : 30 Jan 2024 04:20 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-23
Misc Info : ERR
Vial Number: 30



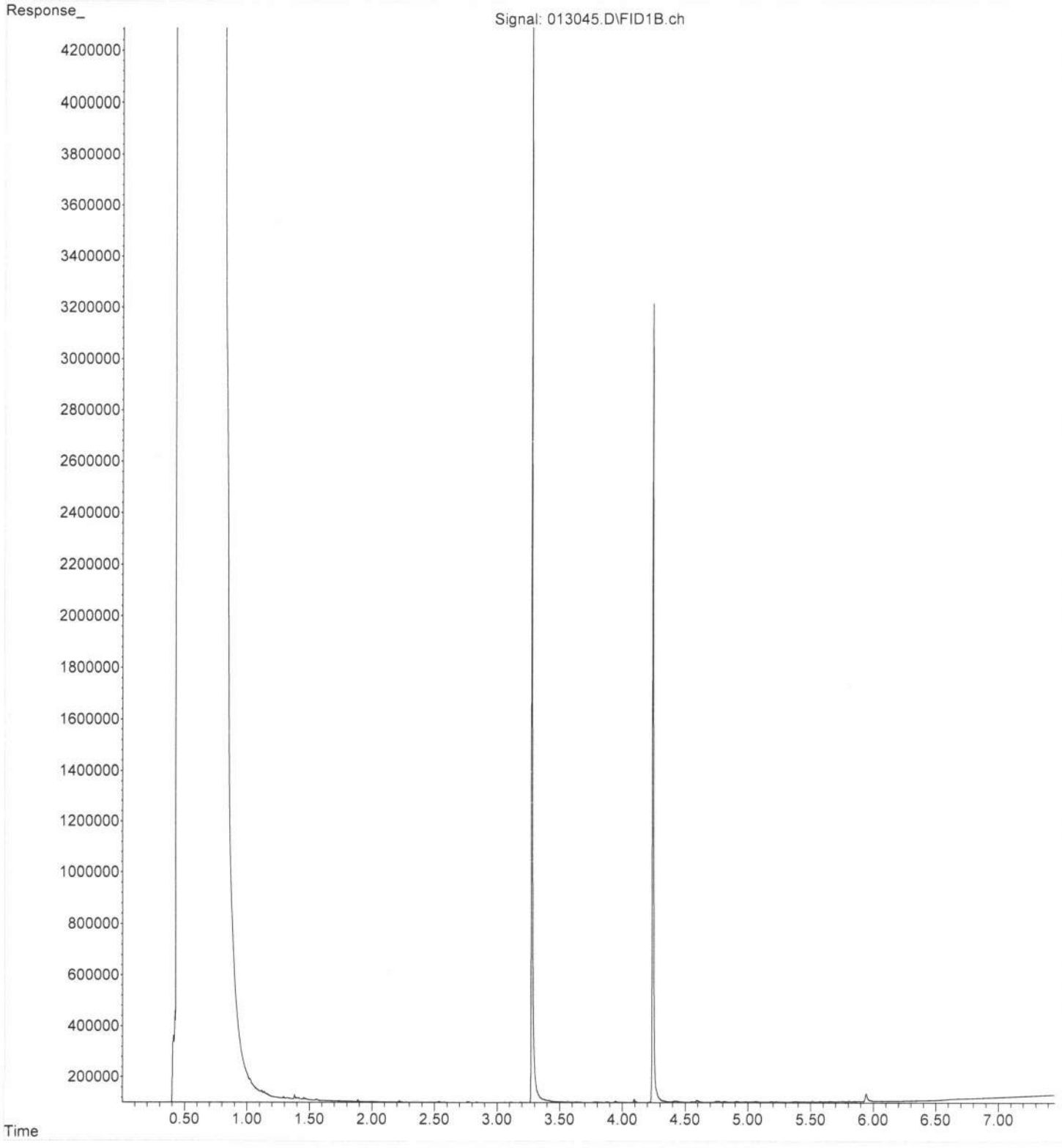
File :P:\Proc_GC13\01-30-24\013041.D
Operator : TL
Acquired : 30 Jan 2024 04:32 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-24
Misc Info : ERR
Vial Number: 31



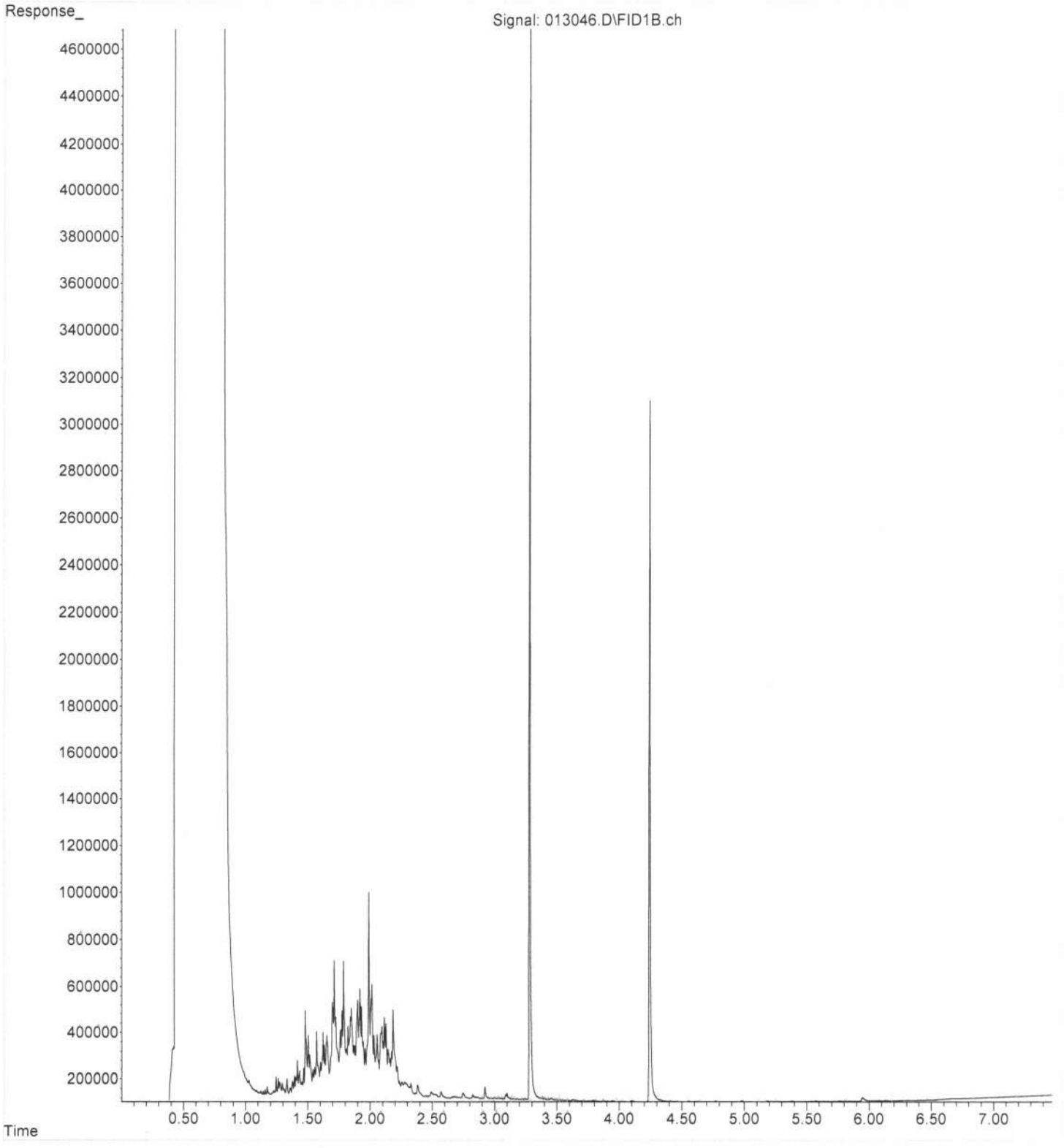
File :P:\Proc_GC13\01-30-24\013044.D
Operator : TL
Acquired : 30 Jan 2024 05:05 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-25
Misc Info : ERR
Vial Number: 33



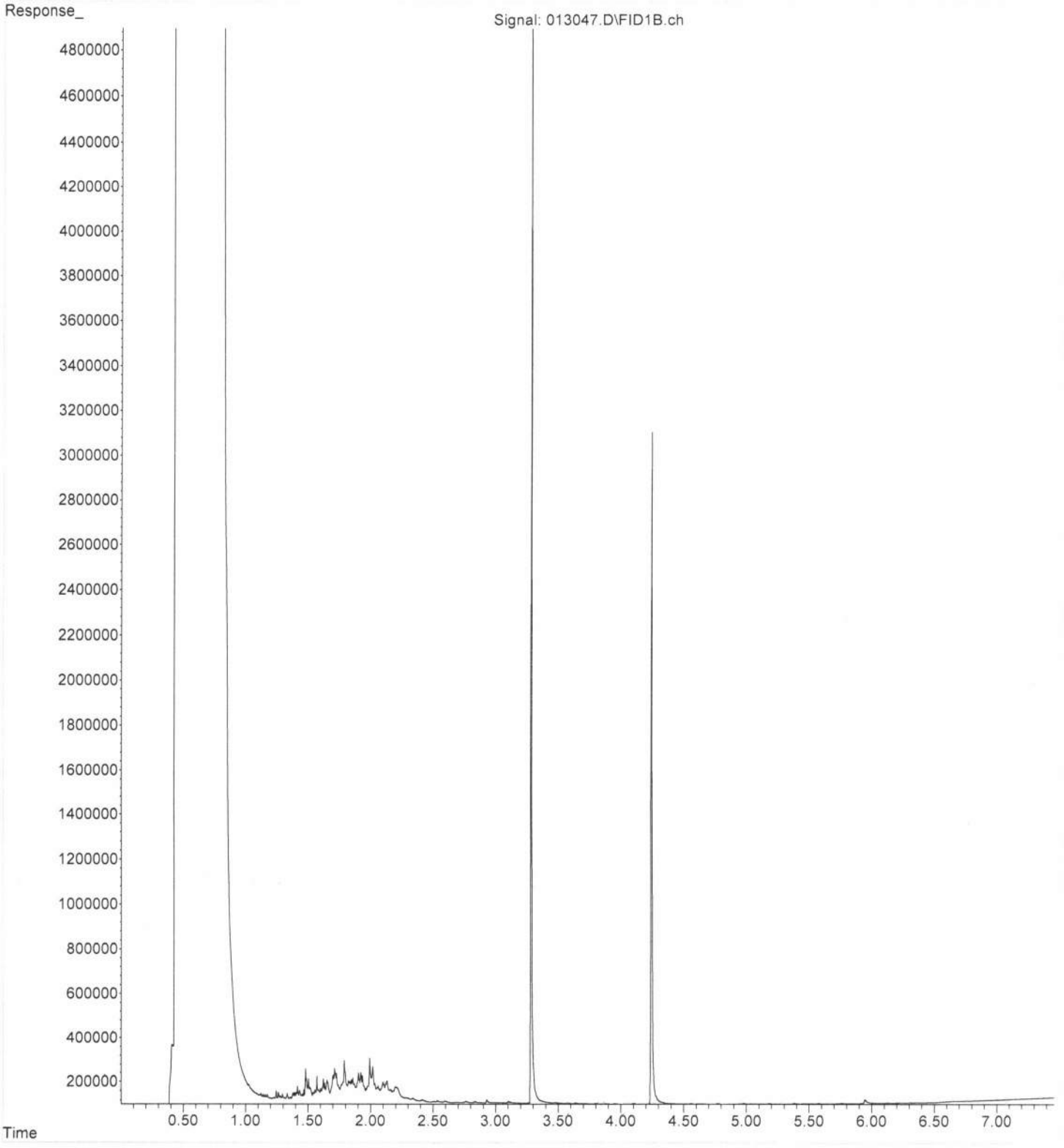
File :P:\Proc_GC13\01-30-24\013045.D
Operator : TL
Acquired : 30 Jan 2024 05:16 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-26
Misc Info : ERR
Vial Number: 34



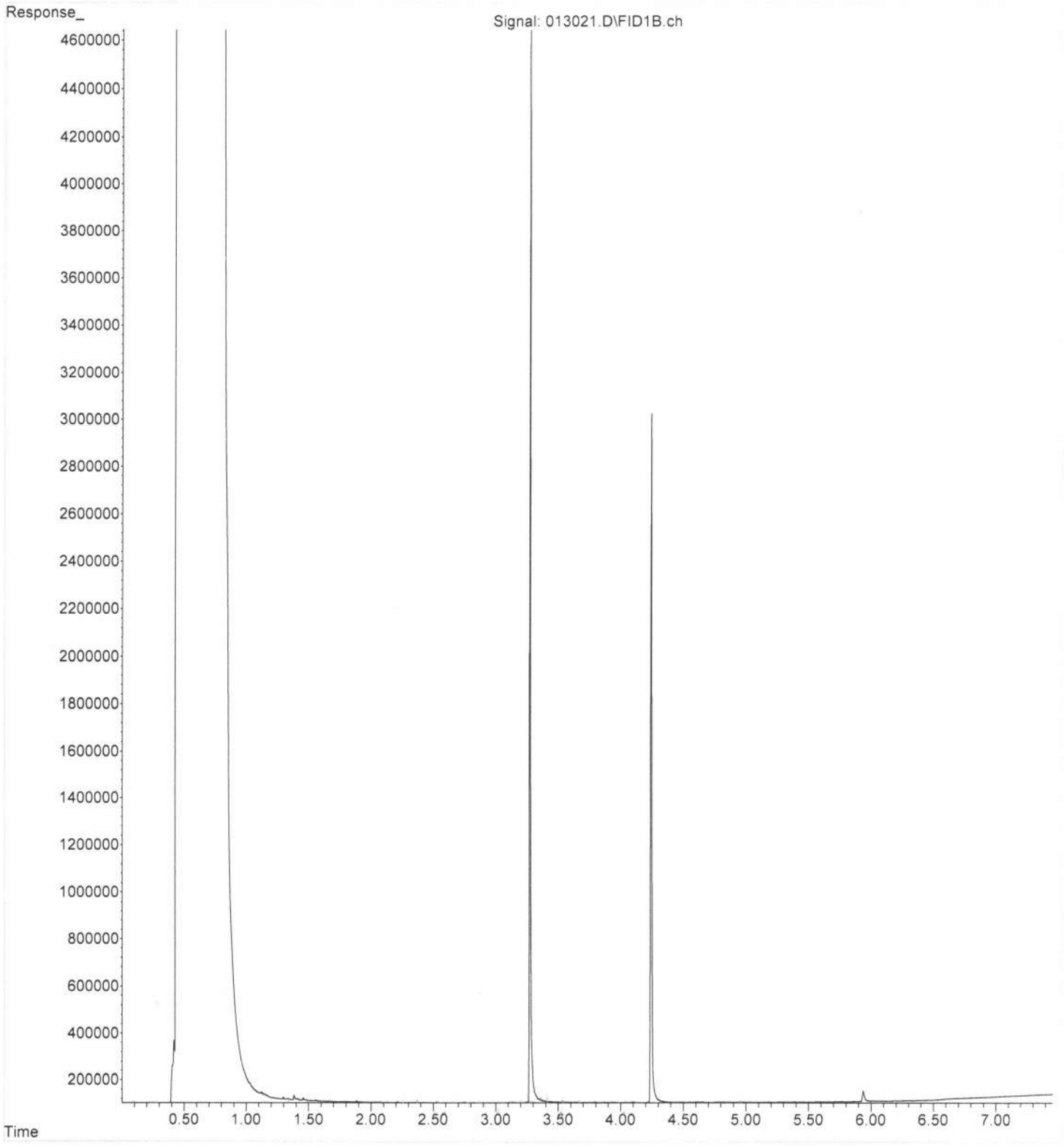
File :P:\Proc_GC13\01-30-24\013046.D
Operator : TL
Acquired : 30 Jan 2024 05:27 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-27
Misc Info : ERR
Vial Number: 35



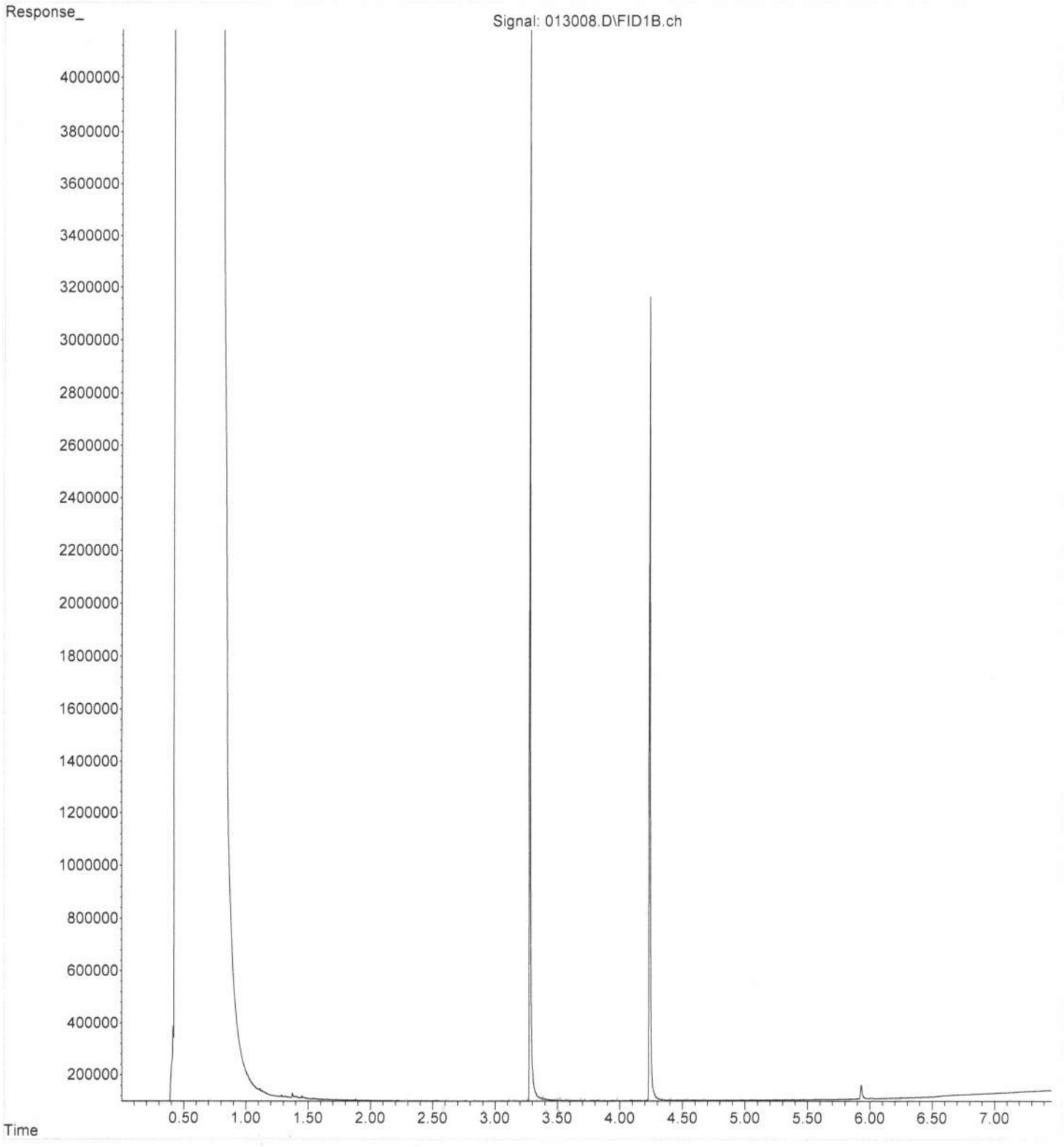
File :P:\Proc_GC13\01-30-24\013047.D
Operator : TL
Acquired : 30 Jan 2024 05:39 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-28
Misc Info : ERR
Vial Number: 36



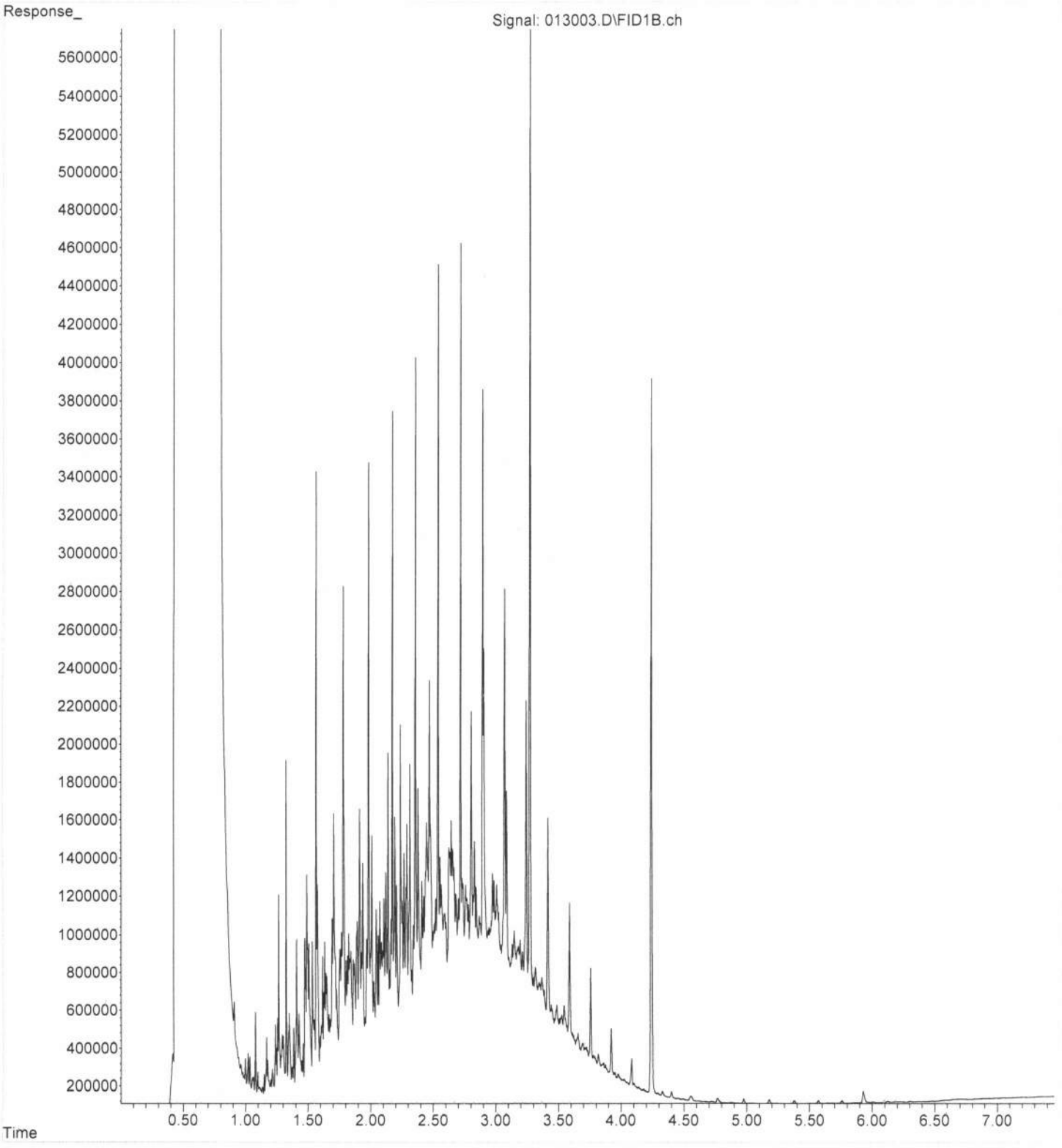
File : P:\Proc_GC13\01-30-24\013021.D
Operator : TL
Acquired : 30 Jan 2024 12:49 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-257 mb2
Misc Info : ERR
Vial Number: 32



File :P:\Proc_GC13\01-30-24\013008.D
Operator : TL
Acquired : 30 Jan 2024 10:24 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-259 mb
Misc Info : ERR
Vial Number: 9

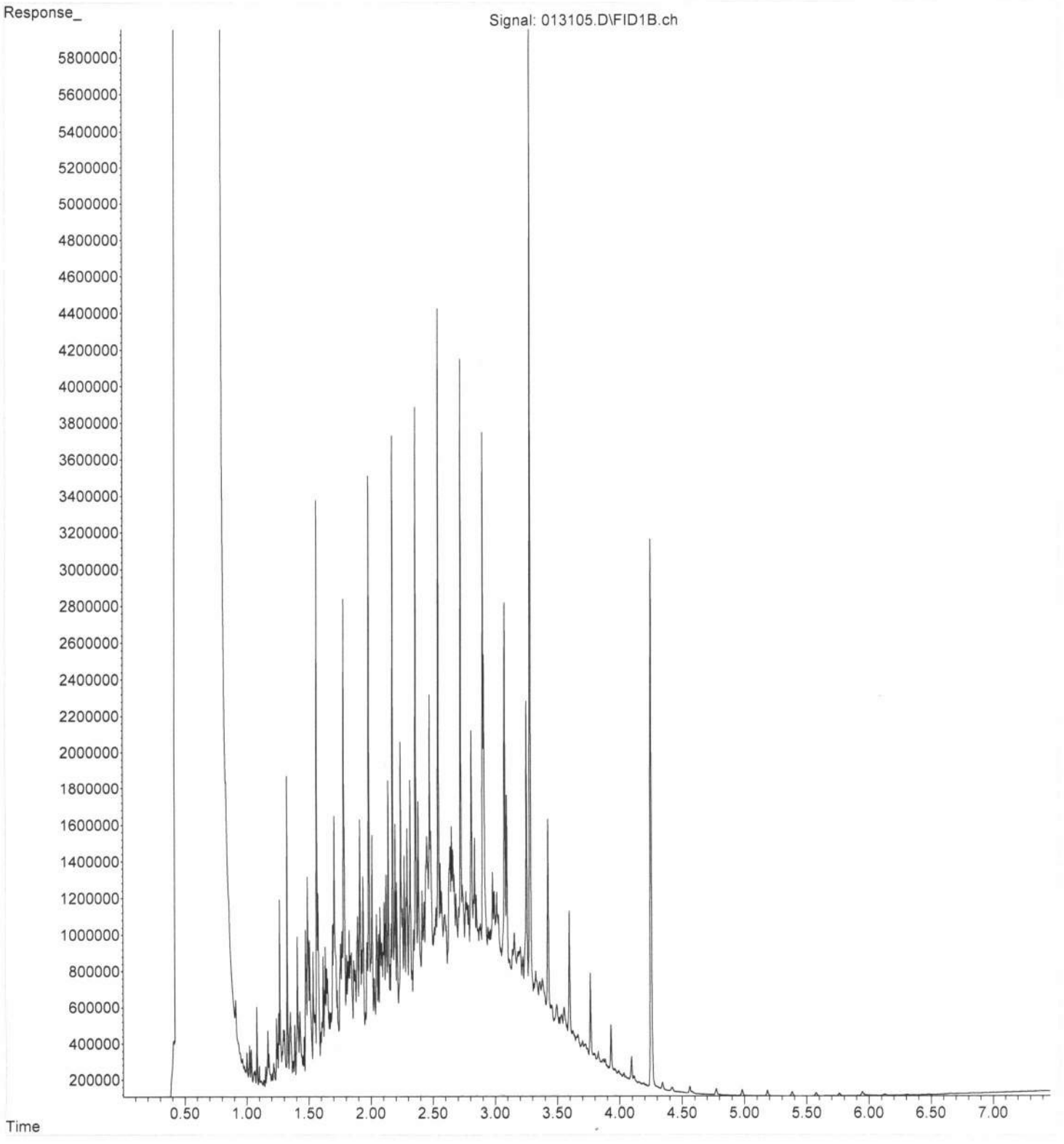


File :P:\Proc_GC13\01-30-24\013003.D
Operator : TL
Acquired : 30 Jan 2024 08:28 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info : ERR
Vial Number: 3



File :P:\Proc_GC13\01-31-24\013105.D
Operator : TL
Acquired : 31 Jan 2024 08:44 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info :
Vial Number: 3

ERR



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401358
Work Order Number: 2402008

February 22, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 2/1/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/22/2024*

CLIENT: Friedman & Bruya
Project: 401358
Work Order: 2402008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402008-001	HA-1-S6	01/26/2024 2:30 PM	02/01/2024 9:30 AM
2402008-002	HA-1-DUP	01/26/2024 3:00 PM	02/01/2024 9:30 AM
2402008-003	HA-2-S7	01/25/2024 10:45 AM	02/01/2024 9:30 AM
2402008-004	HA-3-S6	01/23/2024 4:40 PM	02/01/2024 9:30 AM
2402008-005	MW-23D-S6	01/22/2024 3:10 PM	02/01/2024 9:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402008**
Date: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-001 **Collection Date:** 1/26/2024 2:30:00 PM
Client Sample ID: **HA-1-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	22.7	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C8-C10)	ND	22.7	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Surr: 1-Chlorooctadecane	64.4	50 - 150	H	%Rec	1	2/22/2024 12:12:44 PM
Surr: o-Terphenyl	80.6	50 - 150	H	%Rec	1	2/22/2024 12:12:44 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	ND	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C6-C8)	20.0	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C10-C12)	43.8	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C8-C10)	101	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C10-C12)	57.9	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C12-C13)	33.9	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Surr: 2,5-dibromotoluene	88.2	60 - 140	D	%Rec	10	2/7/2024 4:20:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.9	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-002 **Collection Date:** 1/26/2024 3:00:00 PM
Client Sample ID: **HA-1-DUP** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	22.6	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C8-C10)	ND	22.6	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C16-C21)	17.8	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Surr: 1-Chlorooctadecane	63.9	50 - 150	H	%Rec	1	2/22/2024 12:34:33 PM
Surr: o-Terphenyl	76.0	50 - 150	H	%Rec	1	2/22/2024 12:34:33 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	ND	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C6-C8)	123	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C8-C10)	278	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C10-C12)	469	93.9	D	mg/Kg-dry	50	2/7/2024 1:16:00 PM
Aromatic Hydrocarbon (C8-C10)	1,460	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aromatic Hydrocarbon (C10-C12)	688	93.9	D	mg/Kg-dry	50	2/7/2024 1:16:00 PM
Aromatic Hydrocarbon (C12-C13)	215	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Surr: 2,5-dibromotoluene	110	60 - 140	D	%Rec	10	2/7/2024 4:57:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.7	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-003 **Collection Date:** 1/25/2024 10:45:00 AM
Client Sample ID: **HA-2-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	117	22.5	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C10-C12)	93.8	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C12-C16)	53.6	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C8-C10)	332	22.5	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C10-C12)	344	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C12-C16)	252	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C16-C21)	46.9	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Surr: 1-Chlorooctadecane	66.1	50 - 150	H	%Rec	1	2/22/2024 12:56:23 PM
Surr: o-Terphenyl	77.8	50 - 150	H	%Rec	1	2/22/2024 12:56:23 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	114	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aliphatic Hydrocarbon (C6-C8)	498	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aliphatic Hydrocarbon (C8-C10)	304	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aliphatic Hydrocarbon (C10-C12)	456	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aromatic Hydrocarbon (C8-C10)	1,760	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aromatic Hydrocarbon (C10-C12)	695	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aromatic Hydrocarbon (C12-C13)	205	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Surr: 2,5-dibromotoluene	111	60 - 140	D	%Rec	10	2/7/2024 5:33:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.2	0.500		wt%	1	2/2/2024 9:30:30 AM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-004 **Collection Date:** 1/23/2024 4:40:00 PM
Client Sample ID: **HA-3-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C10-C12)	18.9	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C12-C16)	12.5	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C8-C10)	27.4	21.9	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C10-C12)	60.7	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C12-C16)	61.9	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C16-C21)	22.0	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Surr: 1-Chlorooctadecane	53.7	50 - 150	H	%Rec	1	2/22/2024 1:18:23 PM
Surr: o-Terphenyl	82.3	50 - 150	H	%Rec	1	2/22/2024 1:18:23 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	536	15.8	DH	mg/Kg-dry	10	2/7/2024 6:45:00 AM
Aliphatic Hydrocarbon (C6-C8)	1,530	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aliphatic Hydrocarbon (C8-C10)	553	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aliphatic Hydrocarbon (C10-C12)	802	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C8-C10)	1,920	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C10-C12)	1,120	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C12-C13)	276	15.8	DH	mg/Kg-dry	10	2/7/2024 6:45:00 AM
Surr: 2,5-dibromotoluene	111	60 - 140	DH	%Rec	10	2/7/2024 6:45:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	8.81	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-005 **Collection Date:** 1/22/2024 3:10:00 PM
Client Sample ID: **MW-23D-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C10-C12)	28.5	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C12-C16)	21.3	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C16-C21)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C21-C34)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C12-C16)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C16-C21)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C21-C34)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Surr: 1-Chlorooctadecane	63.7	50 - 150	H	%Rec	1	2/22/2024 1:40:09 PM
Surr: o-Terphenyl	79.0	50 - 150	H	%Rec	1	2/22/2024 1:40:09 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	10.7	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C6-C8)	11.2	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C8-C10)	67.1	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C10-C12)	170	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Aromatic Hydrocarbon (C8-C10)	111	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aromatic Hydrocarbon (C10-C12)	250	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Aromatic Hydrocarbon (C12-C13)	64	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Surr: 2,5-dibromotoluene	125	60 - 140	H	%Rec	1	2/7/2024 3:44:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	8.51	0.500		wt%	1	2/2/2024 9:30:30 AM

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42943**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89774**	
Client ID: **MBLKS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873777**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	68.7		100.0		68.7	50	150				

Sample ID: **MB-42943**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89775**	
Client ID: **MBLKS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873787**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	74.1		100.0		74.1	50	150				

Sample ID: **LCS-42943**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89774**	
Client ID: **LCSS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873778**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	99.5	20.0	250.0	0	39.8	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	69.3	10.0	125.0	0	55.4	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	72.9	10.0	125.0	0	58.3	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	78.2	10.0	125.0	0	62.6	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	79.2	10.0	125.0	0	63.4	36.6	144				
Surr: 1-Chlorooctadecane	66.3		100.0		66.3	50	150				

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42943**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89775**
Client ID: **LCSS**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	120	20.0	250.0	0	47.9	18.6	130				
Aromatic Hydrocarbon (C10-C12)	82.4	10.0	125.0	0	65.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	92.5	10.0	125.0	0	74.0	43.6	124				
Aromatic Hydrocarbon (C16-C21)	89.6	10.0	125.0	0	71.7	49.5	124				
Aromatic Hydrocarbon (C21-C34)	81.2	10.0	125.0	0	65.0	54.8	124				
Surr: o-Terphenyl	66.6		100.0		66.6	50	150				

Sample ID: **LCSD-42943**	SampType: **LCSD**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89774**
Client ID: **LCSS02**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873779**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	94.4	20.0	250.0	0	37.8	15.9	130	99.53	5.24	20	
Aliphatic Hydrocarbon (C10-C12)	68.9	10.0	125.0	0	55.1	30.4	115	69.28	0.565	20	
Aliphatic Hydrocarbon (C12-C16)	77.0	10.0	125.0	0	61.6	39.8	130	72.92	5.43	20	
Aliphatic Hydrocarbon (C16-C21)	81.2	10.0	125.0	0	64.9	50.3	123	78.21	3.71	20	
Aliphatic Hydrocarbon (C21-C34)	85.4	10.0	125.0	0	68.3	36.6	144	79.24	7.49	20	
Surr: 1-Chlorooctadecane	66.7		100.0		66.7	50	150		0		

Sample ID: **LCSD-42943**	SampType: **LCSD**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89775**
Client ID: **LCSS02**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873789**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	118	20.0	250.0	0	47.1	18.6	130	119.9	1.81	20	
Aromatic Hydrocarbon (C10-C12)	83.5	10.0	125.0	0	66.8	42.7	105	82.42	1.29	20	
Aromatic Hydrocarbon (C12-C16)	98.3	10.0	125.0	0	78.6	43.6	124	92.52	6.06	20	
Aromatic Hydrocarbon (C16-C21)	96.0	10.0	125.0	0	76.8	49.5	124	89.59	6.88	20	
Aromatic Hydrocarbon (C21-C34)	79.6	10.0	125.0	0	63.7	54.8	124	81.21	1.99	20	
Surr: o-Terphenyl	68.2		100.0		68.2	50	150		0		

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42804**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **LCSS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868715**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.6	2.50	20.00	0	98.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	8.87	2.50	10.00	0	88.7	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.3	2.50	10.00	0	103	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.4	2.50	10.00	0	104	70	130				
Aromatic Hydrocarbon (C8-C10)	48.7	2.50	50.00	0	97.5	70	130				
Aromatic Hydrocarbon (C10-C12)	9.91	2.50	10.00	0	99.1	70	130				
Aromatic Hydrocarbon (C12-C13)	10.4	2.50	10.00	0	104	70	130				
Surr: 2,5-dibromotoluene	2.41		2.500		96.3	60	140				

Sample ID: **MB-42804**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **MBLKS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868698**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	2.37		2.500		95.0	60	140				

Sample ID: **2402008-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **HA-2-S7**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	104	18.3		0	0			113.7	8.57	25	D
Aliphatic Hydrocarbon (C6-C8)	499	18.3		0	0			498.5	0.0812	25	D
Aliphatic Hydrocarbon (C8-C10)	419	18.3		0	0			395.4	5.80	25	DE
Aliphatic Hydrocarbon (C10-C12)	525	18.3		0	0			505.0	3.86	25	DE
Aromatic Hydrocarbon (C8-C10)	1,810	18.3		0	0			1,757	3.17	25	D

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2402008-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **HA-2-S7** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	608	18.3		0	0			596.1	1.91	25	DE
Aromatic Hydrocarbon (C12-C13)	208	18.3		0	0			204.9	1.53	25	D
Surr: 2,5-dibromotoluene	19.0		18.30		104	60	140		0	0	D

Sample ID: **2402008-005BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **MW-23D-S6** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868705**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	24.0	1.67	13.35	10.72	99.7	70	130				H
Aliphatic Hydrocarbon (C6-C8)	18.6	1.67	6.673	11.16	111	70	130				H
Aliphatic Hydrocarbon (C8-C10)	73.0	1.67	6.673	67.05	89.0	70	130				H
Aliphatic Hydrocarbon (C10-C12)	152	1.67	6.673	148.0	63.0	70	130				SH
Aromatic Hydrocarbon (C8-C10)	143	1.67	33.36	111.3	95.5	70	130				H
Aromatic Hydrocarbon (C10-C12)	141	1.67	6.673	139.7	15.6	70	130				SH
Aromatic Hydrocarbon (C12-C13)	74.3	1.67	6.673	69.70	68.8	70	130				SH
Surr: 2,5-dibromotoluene	1.82		1.668		109	60	140				H

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402008
Logged by:	Morgan Wilson	Date Received:	2/1/2024 9:30:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	0.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402008

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER	
Fremont	
PROJECT NAME/NO.	PO #
401358	D-655
REMARKS	
EIM and EQuIS4	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
																% Solids
HA-1-S6		1/26/2024	1430	soil	2	x	x									90
HA-1-DUP		1/26/2024	1500	soil	2	x	x									89
HA-2-S7		1/25/2024	1045	soil	2	x	x									89
HA-3-S6		1/23/2024	1640	soil	2	x	x									92
MW-23D-S6		1/22/2024	1510	soil	2	x	x									89

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/1/24	0845
Received by:		Nathan Hoffer	FAI	2/1/24	930
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401358
Work Order Number: 2401541

February 06, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 1/30/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/06/2024*

CLIENT: Friedman & Bruya
Project: 401358
Work Order: 2401541

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401541-001	HA-1-S2	01/26/2024 9:35 AM	01/30/2024 12:10 PM
2401541-002	HA-1-S4	01/26/2024 10:55 AM	01/30/2024 12:10 PM
2401541-003	HA-1-S6	01/26/2024 2:30 PM	01/30/2024 12:10 PM
2401541-004	HA-1-Dup	01/26/2024 3:00 PM	01/30/2024 12:10 PM
2401541-005	HA-2-S3	01/24/2024 1:40 PM	01/30/2024 12:10 PM
2401541-006	HA-2-S5	01/24/2024 2:55 PM	01/30/2024 12:10 PM
2401541-007	HA-2-S7	01/24/2024 10:45 AM	01/30/2024 12:10 PM
2401541-008	MW-23D-S4	01/22/2024 12:10 PM	01/30/2024 12:10 PM
2401541-009	MW-23D-S6	01/22/2024 3:10 PM	01/30/2024 12:10 PM
2401541-010	MW-23D-Dup	01/22/2024 3:30 PM	01/30/2024 12:10 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401541**
Date: **2/6/2024**

CLIENT: Friedman & Bruya
Project: 401358

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-001 **Collection Date:** 1/26/2024 9:35:00 AM
Client Sample ID: **HA-1-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 12:50:00 PM

Lab ID: 2401541-002 **Collection Date:** 1/26/2024 10:55:00 AM
Client Sample ID: **HA-1-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:04:00 PM

Lab ID: 2401541-003 **Collection Date:** 1/26/2024 2:30:00 PM
Client Sample ID: **HA-1-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:17:00 PM

Lab ID: 2401541-004 **Collection Date:** 1/26/2024 3:00:00 PM
Client Sample ID: **HA-1-Dup** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:31:00 PM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-005 **Collection Date:** 1/24/2024 1:40:00 PM
Client Sample ID: **HA-2-S3** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 2:58:00 PM

Lab ID: 2401541-006 **Collection Date:** 1/24/2024 2:55:00 PM
Client Sample ID: **HA-2-S5** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:12:00 PM

Lab ID: 2401541-007 **Collection Date:** 1/24/2024 10:45:00 AM
Client Sample ID: **HA-2-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:25:00 PM

Lab ID: 2401541-008 **Collection Date:** 1/22/2024 12:10:00 PM
Client Sample ID: **MW-23D-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:42:00 PM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-009 **Collection Date:** 1/22/2024 3:10:00 PM
Client Sample ID: **MW-23D-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:53:00 PM

Lab ID: 2401541-010 **Collection Date:** 1/22/2024 3:30:00 PM
Client Sample ID: **MW-23D-Dup** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 4:11:00 PM

Work Order: 2401541
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42791**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **MBLKS**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866871**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42791**	SampType: **LCS**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **LCSS**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866873**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.02	0.150	1.000	0	102	80	120				

Sample ID: **2401522-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866874**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.541	0.150						0.4766	12.7	20	

Sample ID: **2401522-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866875**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.61	0.150	1.000	0.4766	113	75	125				

Sample ID: **2401522-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866876**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.87	0.150	1.000	0.4766	140	75	125	1.607	15.3	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2401541
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **2401557-001ADUP** SampType: **DUP** Units: **%-dry** Prep Date: **2/1/2024** RunNo: **89413**
Client ID: **BATCH** Batch ID: **42791** Analysis Date: **2/2/2024** SeqNo: **1866891**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.96	0.150						13.29	50.2	20	E

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401541
Logged by:	Morgan Wilson	Date Received:	1/30/2024 12:10:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401571

Page # _____ of _____

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.
401358

PO #
D-655mg

REMARKS
EIM & EQuIS4

TURNAROUND TIME
☒ Standard
RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	TOC										Notes
HA-1-S2		1/26/2024	935	soil	1	x										
HA-1-S4		1/26/2024	1055	soil	1	x										
HA-1-S6		1/26/2024	1430	soil	1	x										
HA-1-Dup		1/26/2024	1500	soil	1	x										
HA-2-S3		1/24/2024	1340	soil	1	x										
HA-2-S5		1/24/2024	1455	soil	1	x										
~~HA2-S7~~ HA-2-S7		1/25/2024	1045	soil	1	x										
MW-23D-S4		1/22/2024	1210	soil	1	x										
MW-23D-S6		1/22/2024	1510	soil	1	x										
MW-23D-Dup		1/22/2024	1530	soil	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Mac Goldman	Friedman and Bruya	01/30	9:55
Received by:		NSR IRM	FAI	1/30	12:10
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 27, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the additional results from the testing of material submitted on February 6, 2024 from the Whidbey Marine 0204475-001, F&BI 402067 project. There are 6 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0227R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402067 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402067 -01	MW-1S
402067 -02	MW-3S
402067 -03	MW-22D
402067 -04	MW-23D

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-04 1/50
Date Analyzed:	02/19/24	Data File:	021931.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500 ca	Tetrachloroethene	<2.5 j
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<20
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	1,300
Acetone	<2,500 ca	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	4,600
Hexane	<250	o-Xylene	1,100
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	<50
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	75
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	200
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000 ca	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	560
Benzene	10 j	sec-Butylbenzene	<50
Trichloroethene	<1.5 j	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	14,000 ve	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	270
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50 ca
2-Hexanone	<500		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	04-0284 mb
Date Analyzed:	02/07/24	Data File:	020709.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.05 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.05 j	sec-Butylbenzene	<1
Trichloroethene	<0.03 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 02/27/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402068-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	30-221
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	99	50-150
Bromomethane	ug/L (ppb)	10	<5	94	50-150
Chloroethane	ug/L (ppb)	10	<1	96	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	79	50-150
Acetone	ug/L (ppb)	50	<50	44	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	88	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	91	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	93	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	92	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
Chloroform	ug/L (ppb)	10	<1	89	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	84	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	91	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	87	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	88	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	100	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	93	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	101	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
Tetrachloroethene	ug/L (ppb)	10	3.6	95 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	105	50-150
Chlorobenzene	ug/L (ppb)	10	<1	95	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	89	50-150
Styrene	ug/L (ppb)	10	<1	88	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	86	50-150
Bromoform	ug/L (ppb)	10	<5	108	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	114	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	108	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	105	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	50-150
Naphthalene	ug/L (ppb)	10	<1	103	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	94	50-150

Date of Report: 02/27/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	105	104	46-206	1
Chloromethane	ug/L (ppb)	10	105	103	59-132	2
Vinyl chloride	ug/L (ppb)	10	100	99	64-142	1
Bromomethane	ug/L (ppb)	10	93	102	50-197	9
Chloroethane	ug/L (ppb)	10	97	96	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	87	75	51-159	15
Acetone	ug/L (ppb)	50	51	52	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	90	90	64-140	0
Hexane	ug/L (ppb)	10	100	102	54-136	2
Methylene chloride	ug/L (ppb)	10	97	93	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	96	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	95	70-130	3
1,1-Dichloroethane	ug/L (ppb)	10	94	94	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	97	96	64-148	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	70-130	0
Chloroform	ug/L (ppb)	10	87	90	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	75	89	47-112	17
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	93	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	89	88	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	95	92	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	102	101	70-130	1
Benzene	ug/L (ppb)	10	101	98	70-130	3
Trichloroethene	ug/L (ppb)	10	93	90	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	95	70-130	4
Bromodichloromethane	ug/L (ppb)	10	98	94	70-130	4
Dibromomethane	ug/L (ppb)	10	103	100	70-130	3
4-Methyl-2-pentanone	ug/L (ppb)	50	103	105	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	96	69-131	4
Toluene	ug/L (ppb)	10	99	97	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	99	96	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	104	101	70-130	3
2-Hexanone	ug/L (ppb)	50	91	90	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	110	103	70-130	7
Tetrachloroethene	ug/L (ppb)	10	99	98	70-130	1
Dibromochloromethane	ug/L (ppb)	10	106	101	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	109	107	70-130	2
Chlorobenzene	ug/L (ppb)	10	98	99	70-130	1
Ethylbenzene	ug/L (ppb)	10	99	98	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	96	70-130	0
m,p-Xylene	ug/L (ppb)	20	96	96	70-130	0
o-Xylene	ug/L (ppb)	10	92	91	70-130	1
Styrene	ug/L (ppb)	10	91	88	70-130	3
Isopropylbenzene	ug/L (ppb)	10	90	90	70-130	0
Bromoform	ug/L (ppb)	10	119	111	69-138	7
n-Propylbenzene	ug/L (ppb)	10	107	104	70-130	3
Bromobenzene	ug/L (ppb)	10	105	103	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	126	122	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	118	114	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	104	100	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	102	100	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	107	104	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	99	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	104	103	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	106	105	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	103	101	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	102	100	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	119	117	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	99	105	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	100	111	70-130	10
Naphthalene	ug/L (ppb)	10	113	119	70-130	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	106	114	70-130	7

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402067

SAMPLE CHAIN OF CUSTODY

02/06/24

VW4/KS/F31

Page # ____ of ____

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0260475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

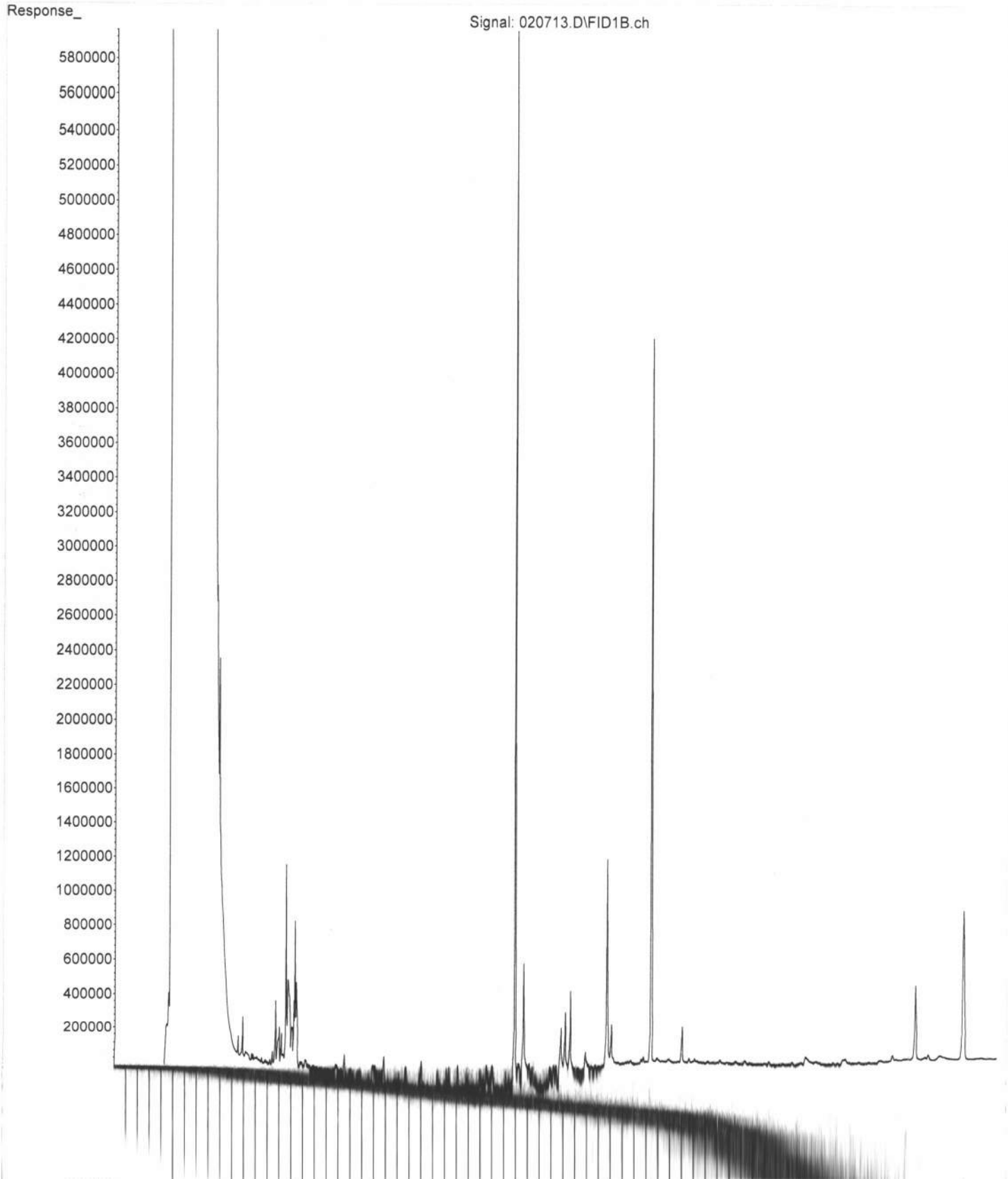
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	Geochemical ~~NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~CVOCs PCBs EPA 8082~~	NwTPH-Dx w/ Silica gel cleanup	TOC	TSS	Tot, Dis As+Pb	Notes
MW-1S	01 A-G	4/5/24	1430	water	7	X	X	X				X	X				Geochemical
MW-3S	02 A-G	↓	1200	↓	7	X	X	X				X	X				parameters:
MW-22D	03 A-O	↓	1540	↓	17	X	X		X	X	X		X	X	X	X	nitrate, nitrite
MW-23D	~~DUP~~ 04 A-O	↓	1240	↓	16	X	X		X	X	X		X	X	X	X	ammonia, chloride
																	sulfate, alkalinity
																	sulfide, MEE
																	dissolved ~~coal~~
																	manganese
																	include Dx, -O
																	chromatograms

NO Fe per HG 2/7/24 ME

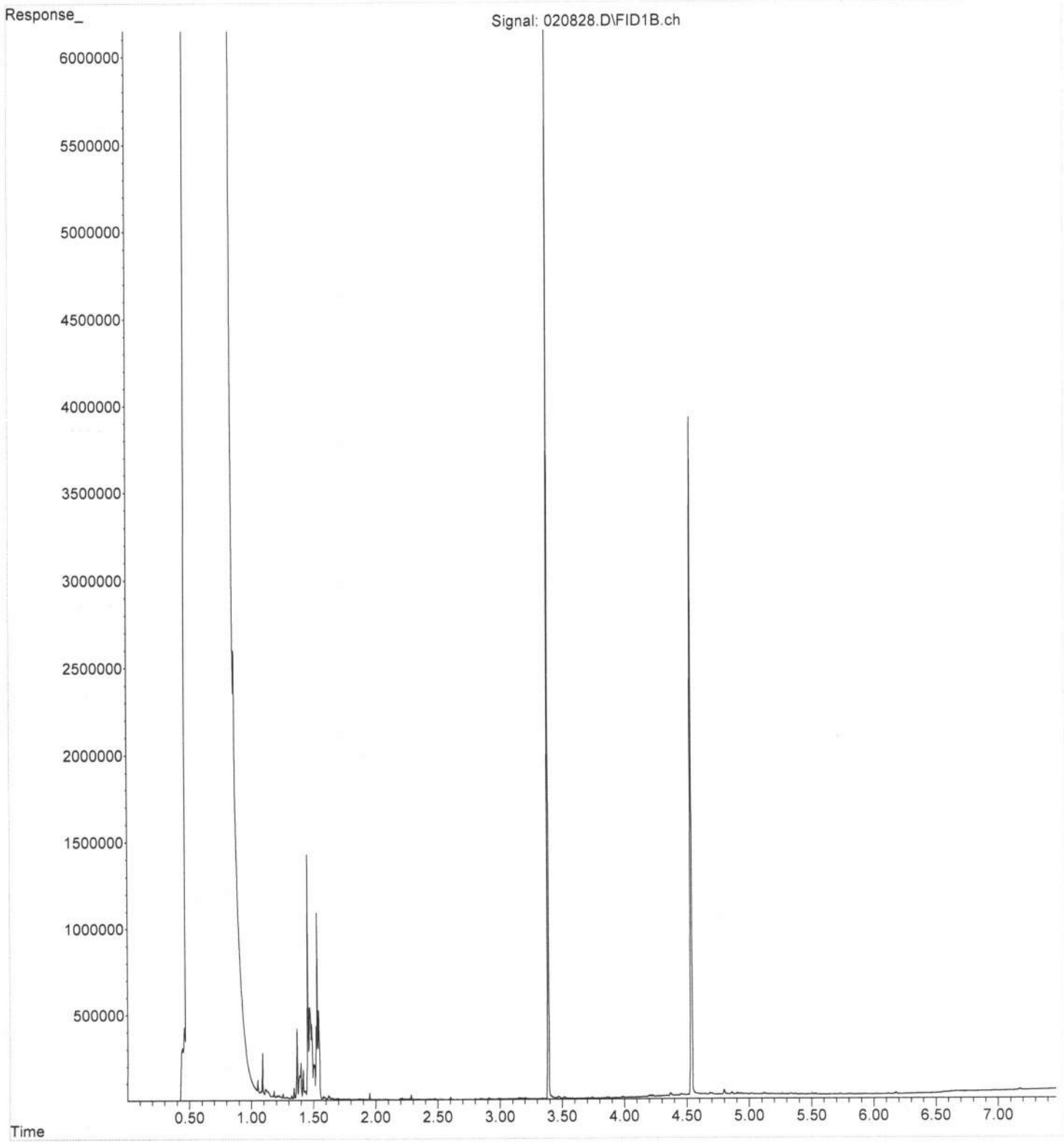
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	4/6/24	1220
Received by: HONG	HONG NGUYEN	FBI	4/6/24	12:20
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

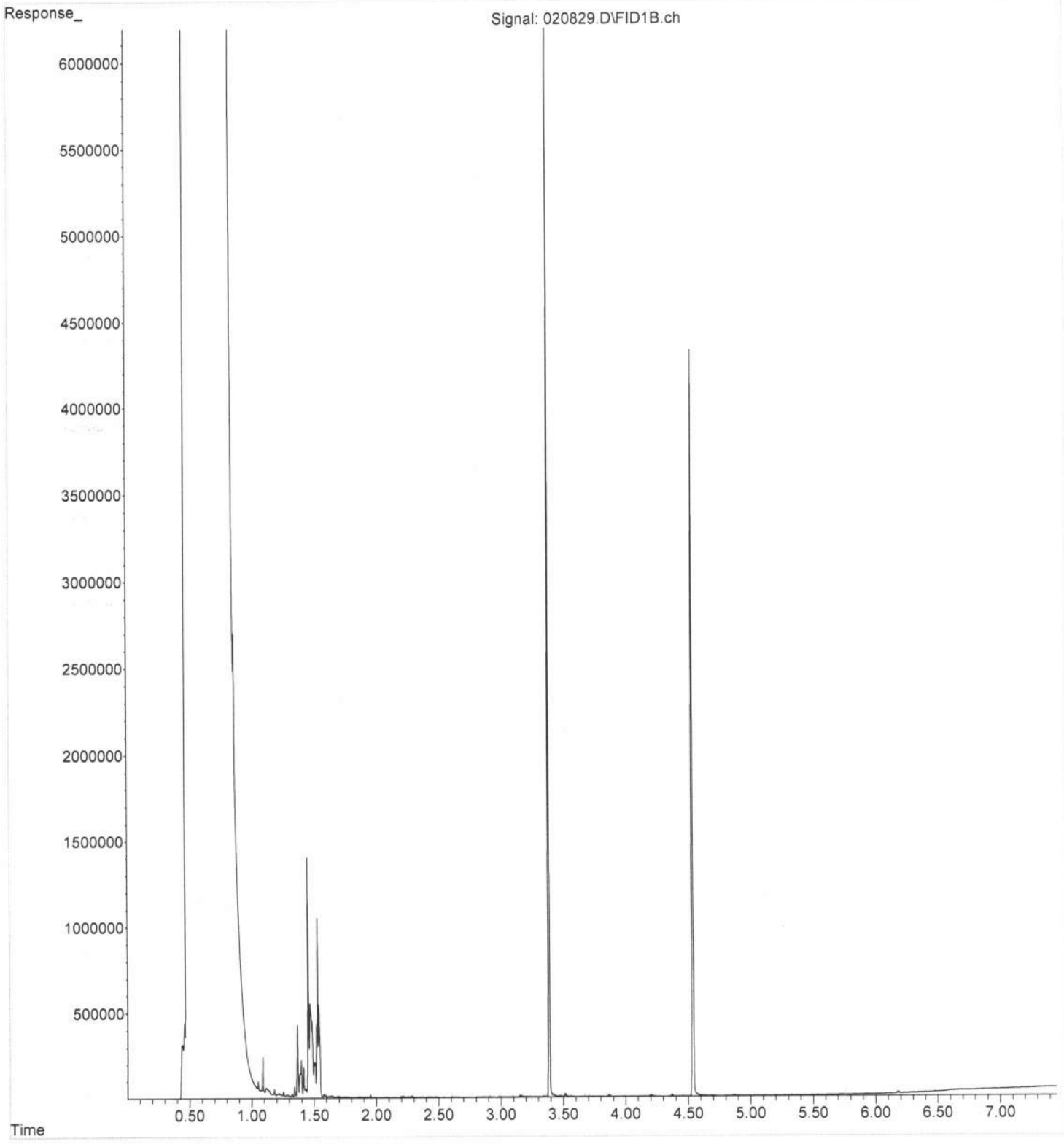
File :P:\Proc_GC14\02-07-24\020713.D
Operator : TL
Acquired : 07 Feb 2024 03:29 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01
Misc Info : ERR
Vial Number: 13



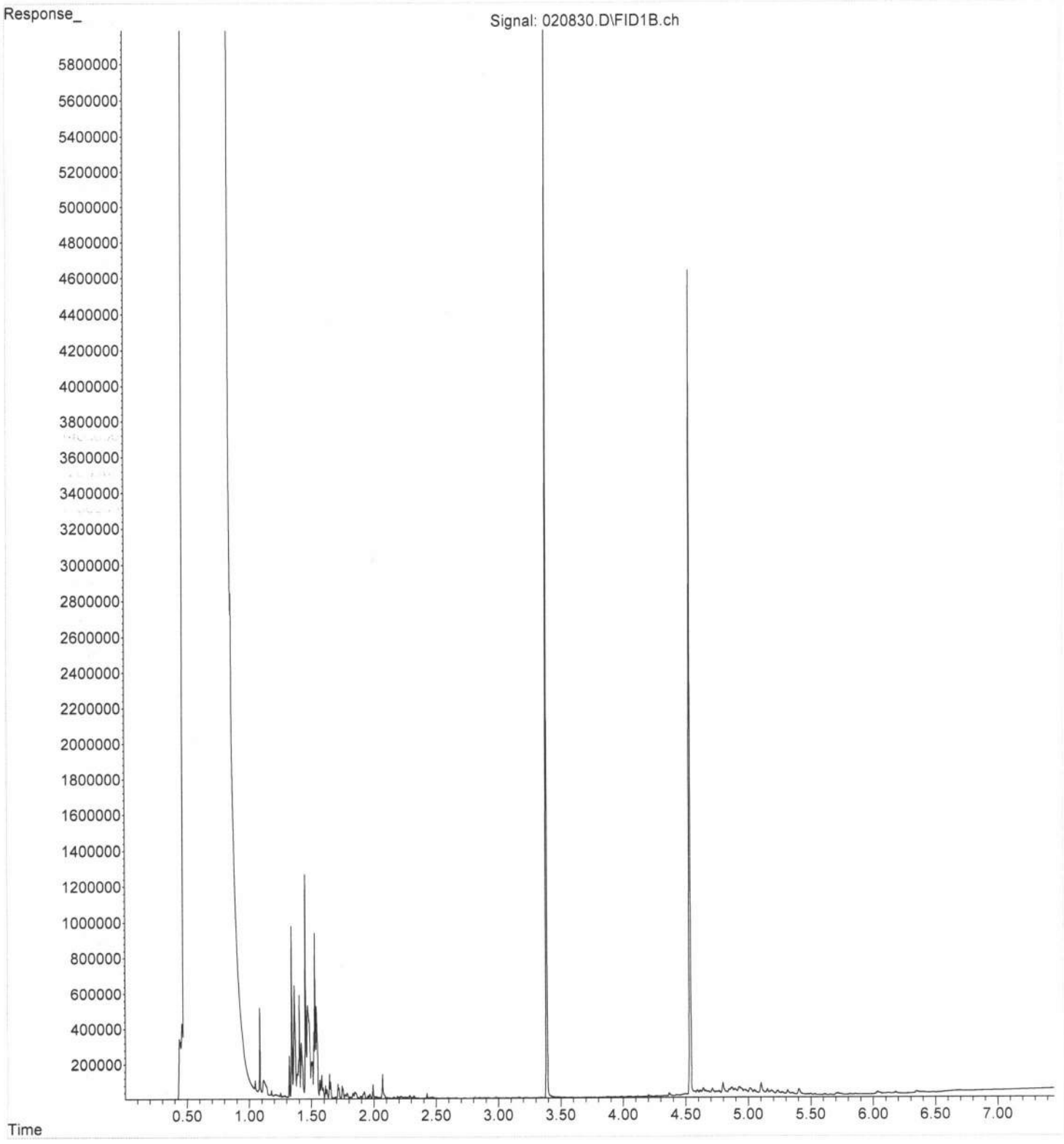
File :P:\Proc_GC14\02-08-24\020828.D
Operator : TL
Acquired : 08 Feb 2024 05:08 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01 sg
Misc Info : ERR
Vial Number: 23



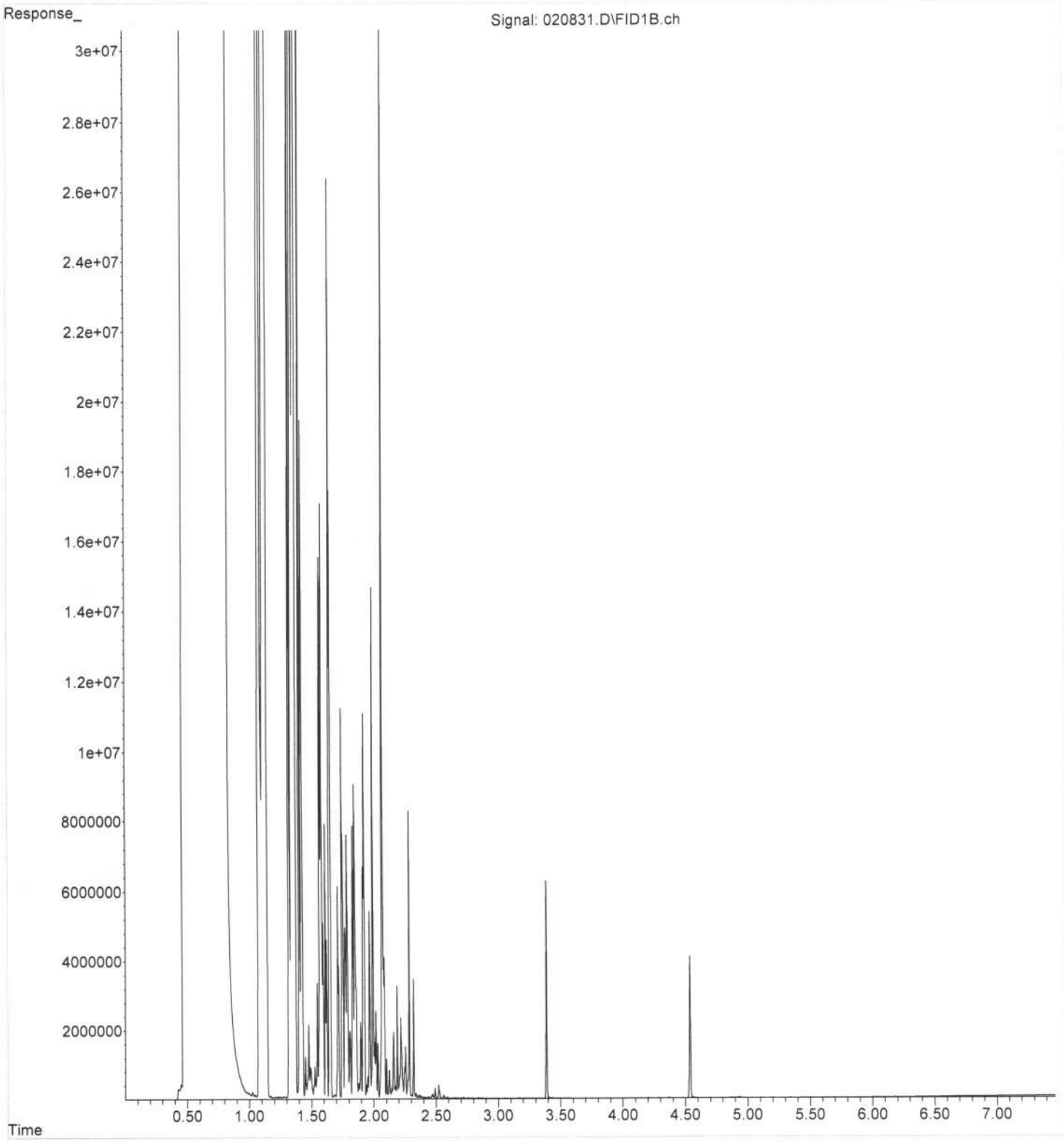
File :P:\Proc_GC14\02-08-24\020829.D
Operator : TL
Acquired : 08 Feb 2024 05:20 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-02 sg
Misc Info : ERR
Vial Number: 24



File :P:\Proc_GC14\02-08-24\020830.D
Operator : TL
Acquired : 08 Feb 2024 05:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-03 sg
Misc Info : ERR
Vial Number: 25

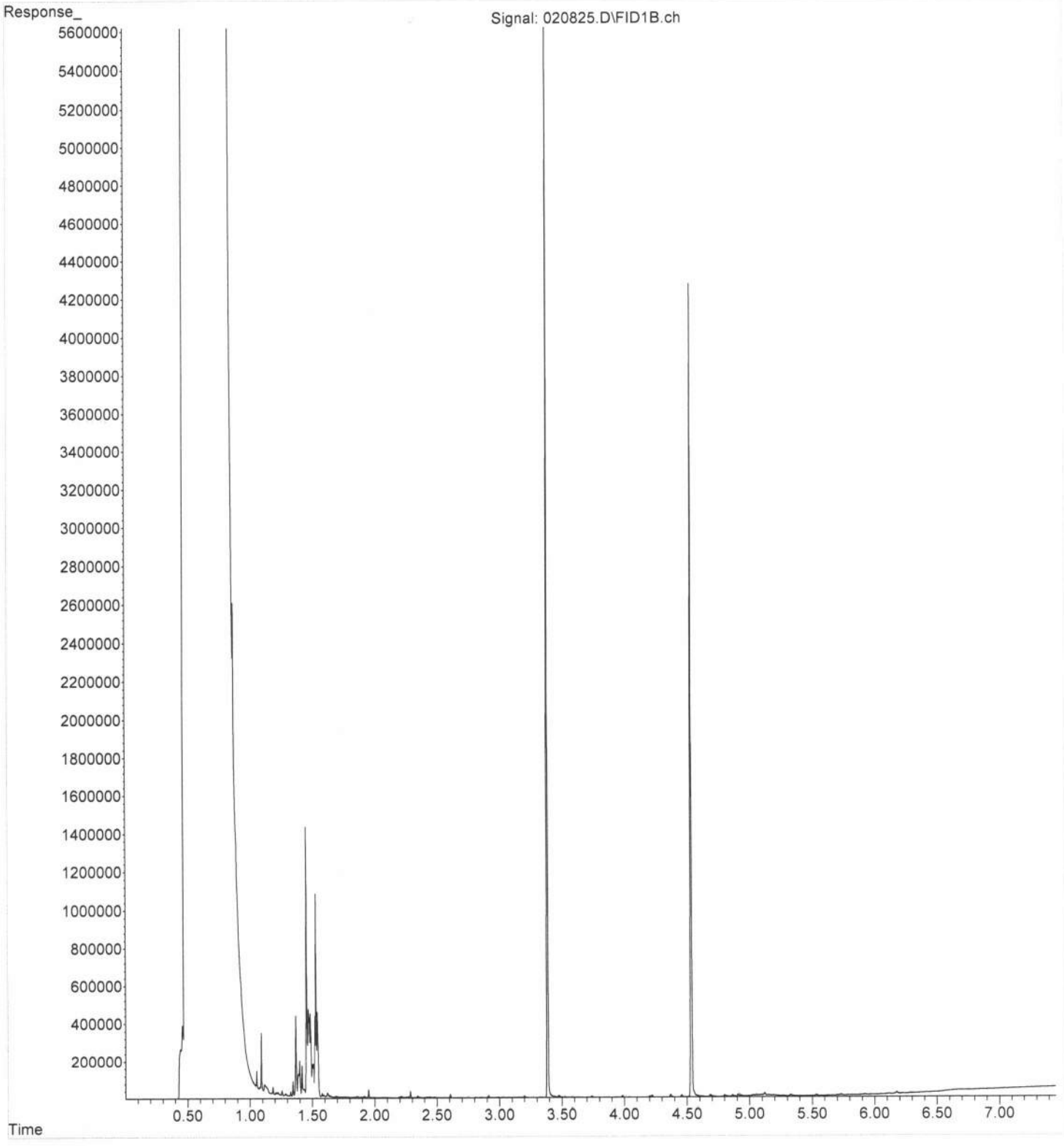


File :P:\Proc_GC14\02-08-24\020831.D
Operator : TL
Acquired : 08 Feb 2024 05:43 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-04 sg
Misc Info : ERR
Vial Number: 26

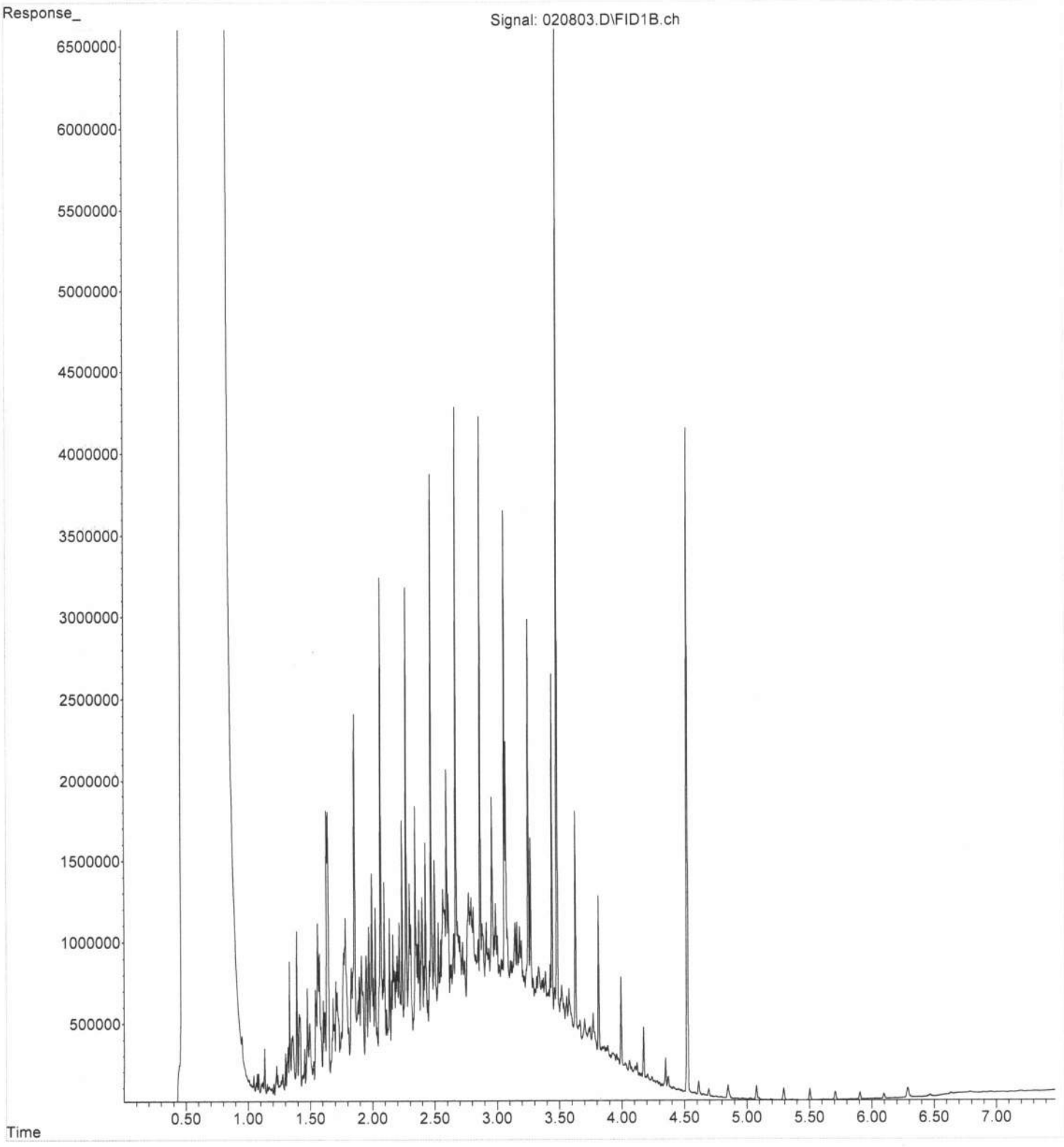


File :P:\Proc_GC14\02-08-24\020825.D
Operator : TL
Acquired : 08 Feb 2024 04:33 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-325 mb sg
Misc Info :
Vial Number: 20

ERR



File :P:\Proc_GC14\02-08-24\020803.D
Operator : TL
Acquired : 08 Feb 2024 09:00 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402067
Work Order Number: 2402085

February 13, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/13/2024*

CLIENT: Friedman & Bruya
Project: 402067
Work Order: 2402085

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402085-001	MW-22D	02/05/2024 3:40 PM	02/06/2024 3:40 PM
2402085-002	MW-23D	02/05/2024 12:40 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402085**
Date: **2/13/2024**

CLIENT: Friedman & Bruya
Project: 402067

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-001 **Collection Date:** 2/5/2024 3:40:00 PM
Client Sample ID: **MW-22D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/12/2024 12:59:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 12:59:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 12:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	6.32	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:25:00 AM
Sulfate	7.03	3.00	D	mg/L	5	2/7/2024 12:25:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.48	0.700		mg/L	1	2/8/2024 9:12:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	147	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:42:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	ND	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-002 **Collection Date:** 2/5/2024 12:40:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	0.0599	0.00675		mg/L	1	2/12/2024 1:02:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 1:02:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 1:02:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	27.1	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:48:00 AM
Sulfate	ND	3.00	D	mg/L	5	2/7/2024 12:48:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	11.3	0.700		mg/L	1	2/8/2024 9:45:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	244	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:47:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.0672	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89571**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MBLKW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89571**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **LCSW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	86.2	126.2				

Sample ID: **2402085-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MW-22D**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	153	2.50						146.5	4.54	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **MBLKW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **LCSW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869932**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869934**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869935**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42841**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **MBLKW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867805**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42841**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **LCSW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867806**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.736	0.120	0.7500	0	98.1	90	110				
Nitrite (as N)	0.716	0.120	0.7500	0	95.5	90	110				
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Sulfate	3.57	0.600	3.750	0	95.1	90	110				

Sample ID: **2401588-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867808**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.211	0.120						0.2080	1.43	20	
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.162	0.100						0.1600	1.24	20	
Sulfate	ND	0.600						0		20	

Sample ID: **2401588-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.5	0.120	0.7500	0.2080	4,180	80	120				ES
Nitrite (as N)	0.735	0.120	0.7500	0	98.0	80	120				
Nitrate (as N)	1.06	0.100	0.7500	0.1600	120	80	120				S

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2401588-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	9.73	0.600	3.750	0.2550	253	80	120				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2401588-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867810**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.4	0.120	0.7500	0.2080	4,160	80	120	31.53	0.346	20	ES
Nitrite (as N)	0.727	0.120	0.7500	0	96.9	80	120	0.7350	1.09	20	
Nitrate (as N)	1.05	0.100	0.7500	0.1600	119	80	120	1.061	0.947	20	
Sulfate	9.59	0.600	3.750	0.2550	249	80	120	9.733	1.48	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **CCB-D**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2402100-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869477**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/10/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/10/2024**	SeqNo: **1869438**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89591**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **LCSW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870309**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	964	0.00675	1,000	0	96.4	73.6	124				
Ethene	962	0.0146	1,000	0	96.2	76.3	122				
Ethane	1,010	0.0151	1,000	0	101	76.1	123				

Sample ID: **MB-R89591**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **MBLKW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870308**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **BATCH**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	3.33	0.00675						3.177	4.57	30	E
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402085
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402085

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402067	D-661

REMARKS

EIM and EQuIS

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Ammonia	Chloride	RSK-175	Sulfate	Alkalinity	Sulfide	TOC		Notes
MW-22D		2/5/2024	1540	water	6	x	x	x	x	x	x	x	x	x		
MW-23D		2/5/2024	1240	water	6	x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1245
Received by:		Nathan Koffler	FAI	2/6/24	1540
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

August 16, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on August 6, 2024 from the Whidbey Marine 0204475, F&BI 408088 project. There are 46 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0816R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475, F&BI 408088 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
408088 -01	MW-12D
408088 -02	MW-18D
408088 -03	MW-23D
408088 -04	MW-19D
408088 -05	MW-21D
408088 -06	MW-22D

Samples MW-12D, MW-18D, MW-23D, and MW-21D were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard did not meet the acceptance criteria for acetone. The data were flagged accordingly.

All quality control requirements were acceptable.

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088
Date Extracted: 08/07/24
Date Analyzed: 08/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-12D 408088-01 1/40	55,000	105
MW-18D 408088-02	<100	97
MW-23D 408088-03 1/100	71,000	105
MW-19D 408088-04	<100	94
MW-21D 408088-05	1,300	111
MW-22D 408088-06	<100	105
Method Blank 04-1741 MB	<100	84

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088
Date Extracted: 08/07/24
Date Analyzed: 08/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-12D 408088-01	4,300 x	<250	92
MW-18D 408088-02 1/1.2	91 x	<300	93
MW-23D 408088-03 1/1.2	5,500 x	<300	89
MW-19D 408088-04	72 x	<250	103
MW-21D 408088-05	270 x	<250	105
MW-22D 408088-06	<50	<250	101
Method Blank 04-1875 MB2	<50	<250	97

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-01 1/50
Date Analyzed:	08/09/24	Data File:	080940.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	99	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	15 j
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	2,000
Acetone	<2,500 ca	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	7,400
Hexane	<250	o-Xylene	3,100
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	65
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	180
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	580
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	2,200
Benzene	<1.7 j	sec-Butylbenzene	<50
Trichloroethene	<1.2 j	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	3,900	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	720
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50
2-Hexanone	<500		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-18D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-02
Date Analyzed:	08/12/24	Data File:	081236.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-03 1/200
Date Analyzed:	08/09/24	Data File:	080941.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	94	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<200	1,3-Dichloropropane	<200
Chloromethane	<2,000	Tetrachloroethene	<5 j
Vinyl chloride	<4	Dibromochloromethane	<100
Bromomethane	<1,000	1,2-Dibromoethane (EDB)	<2
Chloroethane	<200	Chlorobenzene	<200
Trichlorofluoromethane	<200	Ethylbenzene	1,700
Acetone	<10,000 ca	1,1,1,2-Tetrachloroethane	<200
1,1-Dichloroethene	<200	m,p-Xylene	5,600
Hexane	<1,000	o-Xylene	1,400
Methylene chloride	<1,000	Styrene	<200
Methyl t-butyl ether (MTBE)	<200	Isopropylbenzene	<200
trans-1,2-Dichloroethene	<200	Bromoform	<1,000
1,1-Dichloroethane	<200	n-Propylbenzene	<200
2,2-Dichloropropane	<200	Bromobenzene	<200
cis-1,2-Dichloroethene	<200	1,3,5-Trimethylbenzene	260
Chloroform	<200	1,1,2,2-Tetrachloroethane	<40
2-Butanone (MEK)	<4,000	1,2,3-Trichloropropane	<200
1,2-Dichloroethane (EDC)	<40	2-Chlorotoluene	<200
1,1,1-Trichloroethane	<200	4-Chlorotoluene	<200
1,1-Dichloropropene	<200	tert-Butylbenzene	<200
Carbon tetrachloride	<100	1,2,4-Trimethylbenzene	670
Benzene	8.2 j	sec-Butylbenzene	<200
Trichloroethene	<5 j	p-Isopropyltoluene	<200
1,2-Dichloropropane	<200	1,3-Dichlorobenzene	<200
Bromodichloromethane	<100	1,4-Dichlorobenzene	<200
Dibromomethane	<200	1,2-Dichlorobenzene	<200
4-Methyl-2-pentanone	<2,000	1,2-Dibromo-3-chloropropane	<2,000
cis-1,3-Dichloropropene	<80	1,2,4-Trichlorobenzene	<200
Toluene	16,000	Hexachlorobutadiene	<100
trans-1,3-Dichloropropene	<80	Naphthalene	620
1,1,2-Trichloroethane	<100	1,2,3-Trichlorobenzene	<200
2-Hexanone	<2,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-04
Date Analyzed:	08/09/24	Data File:	080936.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-05
Date Analyzed:	08/09/24	Data File:	080938.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	44
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	38
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	120
Hexane	<5	o-Xylene	54
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	3.6
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	9.4
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	25
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	87
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	34
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	408088-06
Date Analyzed:	08/09/24	Data File:	080937.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	96	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	3.5
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	5.4
Hexane	<5	o-Xylene	2.0
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	08/09/24	Lab ID:	04-1824 mb
Date Analyzed:	08/09/24	Data File:	080909.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.025 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.035 j	sec-Butylbenzene	<1
Trichloroethene	<0.025 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-01
Date Analyzed:	08/07/24	Data File:	080715.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	11	173
2-Fluorobiphenyl	68	25	128
2,4,6-Tribromophenol	97	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
1-Methylnaphthalene	51
Acenaphthylene	<0.02
Acenaphthene	0.11
Fluorene	0.13
Phenanthrene	0.17
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-01 1/20
Date Analyzed:	08/09/24	Data File:	080916.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	82 d	11	173
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	119 d	10	140
Terphenyl-d14	82 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	460
2-Methylnaphthalene	120

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-18D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-02
Date Analyzed:	08/07/24	Data File:	080716.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	11	173
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	89	10	140
Terphenyl-d14	84	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	0.021
Phenanthrene	0.073
Anthracene	<0.02
Fluoranthene	0.024
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-03
Date Analyzed:	08/07/24	Data File:	080717.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	110	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	98	10	140
Terphenyl-d14	82	50	150

Compounds:	Concentration ug/L (ppb)
1-Methylnaphthalene	42
Acenaphthylene	<0.02
Acenaphthene	0.15
Fluorene	0.24
Phenanthrene	0.23
Anthracene	0.026
Fluoranthene	0.037
Pyrene	0.036
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-03 1/20
Date Analyzed:	08/09/24	Data File:	080917.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	100 d	11	173
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	125 d	10	140
Terphenyl-d14	82 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	310
2-Methylnaphthalene	78

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-04
Date Analyzed:	08/07/24	Data File:	080718.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	88	10	140
Terphenyl-d14	82	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-05
Date Analyzed:	08/07/24	Data File:	080719.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	11	173
2-Fluorobiphenyl	67	25	128
2,4,6-Tribromophenol	87	10	140
Terphenyl-d14	75	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	11
2-Methylnaphthalene	1.9
1-Methylnaphthalene	1.4
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-06
Date Analyzed:	08/07/24	Data File:	080720.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	11	173
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	95	10	140
Terphenyl-d14	84	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.46
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	04-1890 mb
Date Analyzed:	08/07/24	Data File:	080710.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	15	144
2-Fluorobiphenyl	61	25	128
2,4,6-Tribromophenol	81	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-01
Date Analyzed:	08/09/24	Data File:	408088-01.278
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22
Lead	3.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-18D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-02
Date Analyzed:	08/09/24	Data File:	408088-02.279
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	6.4
Lead	4.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-03
Date Analyzed:	08/09/24	Data File:	408088-03.280
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	19
Lead	7.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-04
Date Analyzed:	08/09/24	Data File:	408088-04.281
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	13
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-05
Date Analyzed:	08/09/24	Data File:	408088-05.282
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.5
Lead	6.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-06
Date Analyzed:	08/09/24	Data File:	408088-06.283
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.9
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	I4-650 mb
Date Analyzed:	08/08/24	Data File:	I4-650 mb.200
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-01
Date Analyzed:	08/09/24	Data File:	408088-01.288
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	16
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-01 x500
Date Analyzed:	08/14/24	Data File:	408088-01 x500.125
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	4,200

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-18D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-02
Date Analyzed:	08/12/24	Data File:	408088-02.121
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.4
Lead	<1
Manganese	2.5

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-03
Date Analyzed:	08/09/24	Data File:	408088-03.292
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	15
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-03 x500
Date Analyzed:	08/14/24	Data File:	408088-03 x500.126
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,800

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-04
Date Analyzed:	08/09/24	Data File:	408088-04.293
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-05
Date Analyzed:	08/09/24	Data File:	408088-05.294
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.1
Lead	1.8

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-05 x10
Date Analyzed:	08/12/24	Data File:	408088-05 x10.124
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	43

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	08/06/24	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	408088-06
Date Analyzed:	08/09/24	Data File:	408088-06.295
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.6
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	08/07/24	Lab ID:	I4-651 mb
Date Analyzed:	08/08/24	Data File:	I4-651 mb.205
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088
Date Extracted: 08/12/24
Date Analyzed: 08/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-12D 408088-01	20
MW-18D 408088 -02	260
MW-23D 408088 -03	75
MW-19D 408088 -04	29
MW-21D 408088 -05	280
MW-22D 408088 -06	77
Method Blank I4-0670 MB	<5

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 408118-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	98	70-130

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	88	100	65-151	13

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 408071-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	109	30-221
Chloromethane	ug/L (ppb)	10	<10	97	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	110	50-150
Bromomethane	ug/L (ppb)	10	<5	100	50-150
Chloroethane	ug/L (ppb)	10	<1	108	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	96	50-150
Acetone	ug/L (ppb)	50	<50	45	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	104	50-150
Hexane	ug/L (ppb)	10	<5	101	50-150
Methylene chloride	ug/L (ppb)	10	<5	100	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	105	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	100	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	116	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	10-211
Chloroform	ug/L (ppb)	10	<1	92	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	73	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	97	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	97	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	96	50-150
Benzene	ug/L (ppb)	10	<0.35	100	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	92	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	92	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	87	50-150
Dibromomethane	ug/L (ppb)	10	<1	96	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	95	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	89	50-150
Toluene	ug/L (ppb)	10	<1	103	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	97	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	101	50-150
2-Hexanone	ug/L (ppb)	50	<10	86	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	99	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	102	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	92	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	99	50-150
Chlorobenzene	ug/L (ppb)	10	<1	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	50-150
m,p-Xylene	ug/L (ppb)	20	<2	104	50-150
o-Xylene	ug/L (ppb)	10	<1	105	50-150
Styrene	ug/L (ppb)	10	<1	100	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	107	50-150
Bromoform	ug/L (ppb)	10	<5	92	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	103	50-150
Bromobenzene	ug/L (ppb)	10	<1	92	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	103	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	106	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	101	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	104	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	99	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	99	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	101	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	104	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	104	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	101	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	99	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	103	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	103	50-150
Naphthalene	ug/L (ppb)	10	<1	107	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	104	50-150

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	111	108	46-206	3
Chloromethane	ug/L (ppb)	10	95	97	59-132	2
Vinyl chloride	ug/L (ppb)	10	105	108	64-142	3
Bromomethane	ug/L (ppb)	10	102	103	50-197	1
Chloroethane	ug/L (ppb)	10	103	105	70-130	2
Trichlorofluoromethane	ug/L (ppb)	10	97	97	51-159	0
Acetone	ug/L (ppb)	50	42	46	10-140	9
1,1-Dichloroethene	ug/L (ppb)	10	100	102	64-140	2
Hexane	ug/L (ppb)	10	92	100	54-136	8
Methylene chloride	ug/L (ppb)	10	97	100	43-134	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	99	102	70-130	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	97	99	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	97	99	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	103	103	64-148	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	97	102	70-130	5
Chloroform	ug/L (ppb)	10	93	97	70-130	4
2-Butanone (MEK)	ug/L (ppb)	50	70	64	47-112	9
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	98	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	96	100	70-130	4
1,1-Dichloropropene	ug/L (ppb)	10	94	93	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	93	97	70-130	4
Benzene	ug/L (ppb)	10	95	100	70-130	5
Trichloroethene	ug/L (ppb)	10	88	92	70-130	4
1,2-Dichloropropane	ug/L (ppb)	10	85	89	70-130	5
Bromodichloromethane	ug/L (ppb)	10	89	91	70-130	2
Dibromomethane	ug/L (ppb)	10	92	99	70-130	7
4-Methyl-2-pentanone	ug/L (ppb)	50	89	93	68-130	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	86	90	69-131	5
Toluene	ug/L (ppb)	10	97	103	70-130	6
trans-1,3-Dichloropropene	ug/L (ppb)	10	94	97	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	95	101	70-130	6
2-Hexanone	ug/L (ppb)	50	79	86	45-138	8
1,3-Dichloropropane	ug/L (ppb)	10	93	98	70-130	5
Tetrachloroethene	ug/L (ppb)	10	98	103	70-130	5
Dibromochloromethane	ug/L (ppb)	10	89	94	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	93	100	70-130	7
Chlorobenzene	ug/L (ppb)	10	94	101	70-130	7
Ethylbenzene	ug/L (ppb)	10	101	106	70-130	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	102	70-130	6
m,p-Xylene	ug/L (ppb)	20	98	103	70-130	5
o-Xylene	ug/L (ppb)	10	98	103	70-130	5
Styrene	ug/L (ppb)	10	96	99	70-130	3
Isopropylbenzene	ug/L (ppb)	10	99	103	70-130	4
Bromoform	ug/L (ppb)	10	90	93	69-138	3
n-Propylbenzene	ug/L (ppb)	10	97	101	70-130	4
Bromobenzene	ug/L (ppb)	10	88	95	70-130	8
1,3,5-Trimethylbenzene	ug/L (ppb)	10	95	97	70-130	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	101	104	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	98	101	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	98	101	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	95	97	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	91	96	70-130	5
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	100	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	95	98	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	97	100	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	96	99	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	95	97	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	97	99	70-130	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	94	100	70-130	6
1,2,4-Trichlorobenzene	ug/L (ppb)	10	98	102	70-130	4
Hexachlorobutadiene	ug/L (ppb)	10	99	101	70-130	2
Naphthalene	ug/L (ppb)	10	99	103	70-130	4
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	104	70-130	6

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	60	70	50-104	15
2-Methylnaphthalene	ug/L (ppb)	10	68	80	52-113	16
1-Methylnaphthalene	ug/L (ppb)	10	69	80	51-115	15
Acenaphthylene	ug/L (ppb)	10	81	91	60-114	12
Acenaphthene	ug/L (ppb)	10	76	87	57-110	13
Fluorene	ug/L (ppb)	10	86	97	61-115	12
Phenanthrene	ug/L (ppb)	10	83	91	63-113	9
Anthracene	ug/L (ppb)	10	86	95	65-117	10
Fluoranthene	ug/L (ppb)	10	94	99	68-121	5
Pyrene	ug/L (ppb)	10	86	93	62-133	8
Benz(a)anthracene	ug/L (ppb)	10	92	97	66-131	5
Chrysene	ug/L (ppb)	10	90	96	66-129	6
Benzo(a)pyrene	ug/L (ppb)	10	95	103	66-129	8
Benzo(b)fluoranthene	ug/L (ppb)	10	91	98	55-144	7
Benzo(k)fluoranthene	ug/L (ppb)	10	95	101	58-139	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	112	117	62-136	4
Dibenz(a,h)anthracene	ug/L (ppb)	10	108	114	55-146	5
Benzo(g,h,i)perylene	ug/L (ppb)	10	107	112	58-137	5

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 408069-02 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	97	92	75-125	5
Lead	ug/L (ppb)	10	<10	105	100	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	102	80-120
Lead	ug/L (ppb)	10	98	80-120

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 408088-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	16.2	95 b	92 b	75-125	3 b
Lead	ug/L (ppb)	10	<1	101	101	75-125	0
Manganese	ug/L (ppb)	20	3,500	928 b	206 b	75-125	127 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	80-120
Lead	ug/L (ppb)	10	98	80-120
Manganese	ug/L (ppb)	20	97	80-120

Date of Report: 08/16/24
Date Received: 08/06/24
Project: Whidbey Marine 0204475, F&BI 408088

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 408136-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

408088

SAMPLE CHAIN OF CUSTODY 08/06/24 F2/VW31/K5

Page # 1 of _____

Report To H. Good, U. Pehlivan

Company Haley and Aldrich

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other _____
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	~~MTBE BTEX EPA 8021~~	~~Sulfide NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	Anions (Alkalinity) PCBs EPA 8082	Total + Dissolved Metals	TSS	dissolved Mn	Ammonia TOC	Notes
MW-12D	01A-R	8/5/24	~~1400~~ 1455	water	18	X	X	X	X	X	X	X	X	X	X	X	anions: nitrate, nitrite, chloride, sulfate
MW-18D	02A-R	↓	1245	↓	18	X	X	X	X	X	X	X	X	X	X	X	
MW-23D	03A-Q		1700		17	X	X	X	X	X	X	X	X	X	X	X	
MW-19D	04A-M		1255		13	X	X			X	X		X	X			
MW-21D	05A-Q		1415		17	X	X	X	X	X	X	X	X	X	X	X	
MW-22D	06A-L	↓	1655	↓	12	X	X			X	X		X	X			
								Samples received at 2 °C									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nalcahara	HA	8/6/24	0900
Received by:	VINH	FBI	8-6-24	11:00
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 408088 CLIENT H+A INITIALS/ DATE: AP 08/06/24

If custody seals are present on cooler, are they intact? ☐ NA ☑ YES ☐ NO

Cooler/Sample temperature 2 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO Initials/ Date: AP 08/06/24
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label? (explain "no" answer below)

Sample ID's	☑ Yes ☐ No	☐ Not on COC/label
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	☐ Yes ☑ No	Not on COC for: MW-19D(04), MW-21D(-05), MW-22D (06)
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☑ NA ☐ YES ☐ NO

Number of unused TO15 canisters** _____ Number of unused TO17 tubes _____
**Fill out Green manifolds billing sheet

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 408088, E-332
Work Order Number: 2408076

August 14, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 4 sample(s) on 8/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Sulfide by SM 4500-S2-F
Total Alkalinity by EPA 310.2
Total Organic Carbon by SM 5310C

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *08/14/2024*

CLIENT: Friedman & Bruya
Project: 408088
Work Order: 2408076

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2408076-001	MW-12D	08/05/2024 2:55 PM	08/06/2024 1:30 PM
2408076-002	MW-18D	08/05/2024 2:55 PM	08/06/2024 1:30 PM
2408076-003	MW-23D	08/05/2024 5:00 PM	08/06/2024 1:30 PM
2408076-004	MW-21D	08/05/2024 2:15 PM	08/06/2024 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2408076**

Date: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408088

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2408076**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408088

Lab ID: 2408076-001 **Collection Date:** 8/5/2024 2:55:00 PM
Client Sample ID: **MW-12D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93528		Analyst: LB
Methane	ND	0.00500		mg/L	1	8/7/2024 2:02:00 PM
Ethene	ND	0.0100		mg/L	1	8/7/2024 2:02:00 PM
Ethane	ND	0.0100		mg/L	1	8/7/2024 2:02:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	12.2	1.00	D	mg/L	5	8/8/2024 7:26:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 1:52:00 PM
Nitrate (as N)	ND	0.400	D	mg/L	2	8/7/2024 1:52:00 PM
Sulfate	ND	2.00	D*	mg/L	2	8/7/2024 1:52:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	11.3	0.700		mg/L	1	8/14/2024 12:41:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	47.9	2.50		mg/L	1	8/12/2024 4:28:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 11:15:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R93610		Analyst: SS
Sulfide	3.40	1.00		mg/L	1	8/13/2024 4:31:33 PM

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Analytical Report

Work Order: **2408076**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408088

Lab ID: 2408076-002 **Collection Date:** 8/5/2024 2:55:00 PM
Client Sample ID: **MW-18D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93528		Analyst: LB
Methane	ND	0.00500		mg/L	1	8/7/2024 2:04:00 PM
Ethene	ND	0.0100		mg/L	1	8/7/2024 2:04:00 PM
Ethane	ND	0.0100		mg/L	1	8/7/2024 2:04:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	25.7	2.00	D	mg/L	10	8/8/2024 7:49:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 2:15:00 PM
Nitrate (as N)	16.9	2.00	DH	mg/L	10	8/8/2024 7:49:00 PM
Sulfate	20.6	2.00	D*	mg/L	2	8/7/2024 2:15:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	1.42	0.700		mg/L	1	8/14/2024 2:38:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	26.2	2.50		mg/L	1	8/12/2024 4:33:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 11:36:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R93610		Analyst: SS
Sulfide	ND	1.00		mg/L	1	8/13/2024 4:31:33 PM

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Analytical Report

Work Order: **2408076**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408088

Lab ID: 2408076-003 **Collection Date:** 8/5/2024 5:00:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93528		Analyst: LB
Methane	0.0973	0.00500		mg/L	1	8/7/2024 2:08:00 PM
Ethene	ND	0.0100		mg/L	1	8/7/2024 2:08:00 PM
Ethane	ND	0.0100		mg/L	1	8/7/2024 2:08:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	27.7	2.00	D	mg/L	10	8/8/2024 8:12:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 2:38:00 PM
Nitrate (as N)	ND	0.400	D	mg/L	2	8/7/2024 2:38:00 PM
Sulfate	ND	2.00	D*	mg/L	2	8/7/2024 2:38:00 PM
NOTES:						
* - Associated LCS is below acceptance criteria. Result may be low-biased.						
Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	10.9	0.700		mg/L	1	8/14/2024 3:08:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	38.1	2.50		mg/L	1	8/12/2024 4:36:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 11:41:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R93610		Analyst: SS
Sulfide	2.40	1.00		mg/L	1	8/13/2024 4:31:33 PM

Analytical Report

Work Order: **2408076**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408088

Lab ID: 2408076-004 **Collection Date:** 8/5/2024 2:15:00 PM
Client Sample ID: **MW-21D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93528		Analyst: LB
Methane	ND	0.00500		mg/L	1	8/7/2024 2:10:00 PM
Ethene	ND	0.0100		mg/L	1	8/7/2024 2:10:00 PM
Ethane	ND	0.0100		mg/L	1	8/7/2024 2:10:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	62.7	4.00	D	mg/L	20	8/8/2024 8:36:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 3:01:00 PM
Nitrate (as N)	1.67	0.400	D	mg/L	2	8/7/2024 3:01:00 PM
Sulfate	7.11	2.00	D*	mg/L	2	8/7/2024 3:01:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	1.38	0.700		mg/L	1	8/14/2024 3:38:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	120	7.50	D	mg/L	3	8/12/2024 5:16:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 11:47:00 AM
Sulfide by SM 4500-S2-F				Batch ID: R93610		Analyst: SS
Sulfide	2.20	1.00		mg/L	1	8/13/2024 4:31:33 PM

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-93586**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93586**		
Client ID: **MBLKW**	Batch ID: **R93586**					Analysis Date: **8/12/2024**		SeqNo: **1953770**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-93586**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93586**		
Client ID: **LCSW**	Batch ID: **R93586**					Analysis Date: **8/12/2024**		SeqNo: **1953771**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	26.6	2.50	25.00	0	106	83.8	121				

Sample ID: **2408076-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93586**		
Client ID: **MW-12D**	Batch ID: **R93586**					Analysis Date: **8/12/2024**		SeqNo: **1953773**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	47.0	2.50						47.90	1.90	20	

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-44810**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **MBLKW**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954284**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-44810**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **LCSW**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954285**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.527	0.150	0.5000	0	105	83.7	113.7				

Sample ID: **2408076-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **MW-12D**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408076-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **MW-12D**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954288**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2408076-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **MW-12D**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954289**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150	0		30	S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2408179-002BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/12/2024** RunNo: **93611**
Client ID: **BATCH** Batch ID: **44810** Analysis Date: **8/13/2024** SeqNo: **1954302**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408179-002BMS** SampType: **MS** Units: **mg/L** Prep Date: **8/12/2024** RunNo: **93611**
Client ID: **BATCH** Batch ID: **44810** Analysis Date: **8/13/2024** SeqNo: **1954303**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.337	0.150	0.5000	0	67.4	12.2	150				

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-44773** SampType: **MBLK** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **MBLKW** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953363**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2408063-002ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953366**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.04	0.200						1.009	3.03	20	
Nitrite (as N)	ND	0.200						0		20	HQ
Nitrate (as N)	ND	0.200						0		20	H
Sulfate	1.20	1.00						1.161	2.89	20	*

NOTES:
Q - Associated calibration verification is below acceptance criteria (86.8%, nominal 90-110). Result may be low-biased.
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Sample ID: **2408063-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953367**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.82	0.200	0.7500	1.009	109	80	120				
Nitrite (as N)	0.777	0.200	0.7500	0	104	80	120				H
Nitrate (as N)	0.761	0.200	0.7500	0	101	80	120				H
Sulfate	4.89	1.00	3.750	1.161	99.5	80	120				

Sample ID: **2408063-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953368**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.82	0.200	0.7500	1.009	108	80	120	1.823	0.275	20	

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2408063-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953368**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.773	0.200	0.7500	0	103	80	120	0.7770	0.516	20	H
Nitrate (as N)	0.760	0.200	0.7500	0	101	80	120	0.7610	0.131	20	H
Sulfate	4.88	1.00	3.750	1.161	99.2	80	120	4.894	0.266	20	

Sample ID: **2408097-002ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953382**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.8	0.400						17.00	1.17	20	DE
Nitrite (as N)	ND	0.400						0		20	D
Nitrate (as N)	ND	0.400						0		20	D
Sulfate	27.8	2.00						28.14	1.41	20	D

Sample ID: **2408097-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953383**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	17.9	0.400	1.500	17.00	57.5	80	120				DES
Nitrite (as N)	1.50	0.400	1.500	0	99.7	80	120				D
Nitrate (as N)	1.66	0.400	1.500	0.2020	96.9	80	120				D
Sulfate	34.9	2.00	7.500	28.14	89.8	80	120				D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **LCS-RR** SampType: **LCS** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93567**
Client ID: **LCSW** Batch ID: **44773** Analysis Date: **8/8/2024** SeqNo: **1953404**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.688	0.200	0.7500	0	91.7	90	110				
Nitrite (as N)	0.699	0.200	0.7500	0	93.2	90	110				
Nitrate (as N)	0.722	0.200	0.7500	0	96.3	90	110				

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-RR** SampType: **LCS** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93567**
Client ID: **LCSW** Batch ID: **44773** Analysis Date: **8/8/2024** SeqNo: **1953404**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.30	1.00	3.750	0	88.1	90	110				S

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Sulfide by SM 4500-S2-F

Sample ID: **MB-R93610**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93610**	
Client ID: **MBLKW**	Batch ID: **R93610**					Analysis Date: **8/13/2024**		SeqNo: **1954319**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	1.00									

Sample ID: **LCS-R93610**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93610**	
Client ID: **LCSW**	Batch ID: **R93610**					Analysis Date: **8/13/2024**		SeqNo: **1954320**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	1.40	1.00	2.000	0	70.0	45.6	120				

Sample ID: **2408180-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93610**	
Client ID: **BATCH**	Batch ID: **R93610**					Analysis Date: **8/13/2024**		SeqNo: **1954322**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	1.00						0		30	

Sample ID: **2408076-004CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93610**	
Client ID: **MW-21D**	Batch ID: **R93610**					Analysis Date: **8/13/2024**		SeqNo: **1954327**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	4.40	1.00	2.000	2.200	110	21.5	190				

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **LCS**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/13/2024**	RunNo: **93616**
Client ID: **LCSW**	Batch ID: **R93616**		Analysis Date: **8/13/2024**	SeqNo: **1954406**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	24.1	0.700	25.00	0	96.4	87.6	109				

Sample ID: **MB**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **MBLKW**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954408**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2408076-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **MW-12D**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954410**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.3	0.700						11.29	0.168	20	

Sample ID: **2408076-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **MW-12D**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954411**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	35.6	0.700	25.00	11.29	97.3	76.5	111				

Sample ID: **2408076-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **MW-12D**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954412**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	34.5	0.700	25.00	11.29	92.8	76.5	111	35.61	3.18	30	

Work Order: 2408076
CLIENT: Friedman & Bruya
Project: 408088

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R93528** SampType: **LCS** Units: **ppmv** Prep Date: **8/7/2024** RunNo: **93528**
Client ID: **LCSW** Batch ID: **R93528** Analysis Date: **8/7/2024** SeqNo: **1952426**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	883	0.00500	1,000	0	88.3	73.6	124				
Ethene	861	0.0100	1,000	0	86.1	76.3	122				
Ethane	893	0.0100	1,000	0	89.3	76.1	123				

Sample ID: **MB-R93528** SampType: **MBLK** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93528**
Client ID: **MBLKW** Batch ID: **R93528** Analysis Date: **8/7/2024** SeqNo: **1952425**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2408076-002AREP** SampType: **REP** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93528**
Client ID: **MW-18D** Batch ID: **R93528** Analysis Date: **8/7/2024** SeqNo: **1952420**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2408076
Logged by:	Clare Griggs	Date Received:	8/6/2024 1:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☐	No ☑	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	3.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Alliance Technical Group

PROJECT NAME/NO.	PO #
408088	E-332

REMARKS: EIM and EQuIS 4 2408076

TURNAROUND TIME
☒ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	RSK gases	Sulfide	Alkalinity	Ammonia	TOC	Anions					Notes
						ANALYSES REQUESTED										
MW-12D		8/5/2024	1455	water	6	x	x	x	x	x	x					Anions = nitrate
MW-18D		8/5/2024	1455	water	6	x	x	x	x	x	x					sulfate, nitrite,
MW-23D		8/5/2024	1700	water	6	x	x	x	x	x	x					chloride
MW-21D		8/5/2024	1415	water	6	x	x	x	x	x	x					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/6/24	1152
Received by:		Jack Hawthorne	ATG	8/6/24	1330
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

August 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on August 7, 2024 from the Whidbey Marine, 0204475-001 F&BI 408136 project. There are 49 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0819R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 7, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine, F&BI 408136 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
408136 -01	MW-6S
408136 -02	MW-8S
408136 -03	MW-9D
408136 -04	MW-17D
408136 -05	MW-20D
408136 -06	FD-01

Samples MW-8S, MW-9D, MW-17D, and FD-01 were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard exceeded the acceptance criteria for several compounds. The compounds were not detected, therefore this did not represent an out of control condition, and the results are not considered estimates.

The 8260D calibration standard did not meet the acceptance criteria for methylene chloride. The data were flagged accordingly.

All quality control requirements were acceptable.

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136
Date Extracted: 08/09/24
Date Analyzed: 08/09/24 and 08/10/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-6S 408136-01	1,900	106
MW-8S 408136-02	3,000	106
MW-9D 408136-03 1/40	59,000	105
MW-17D 408136-04 1/20	24,000	100
MW-20D 408136-05	<100	103
FD-01 408136-06 1/40	53,000	109
Method Blank 04-1745 MB	<100	101

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136
Date Extracted: 08/09/24
Date Analyzed: 08/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-6S 408136-01 1/1.2	450 x	<300	91
MW-8S 408136-02 1/1.2	550 x	<300	94
MW-9D 408136-03	2,600 x	<250	95
MW-17D 408136-04	600 x	<250	83
MW-20D 408136-05	<50	<250	99
FD-01 408136-06	3,300 x	<250	91
Method Blank 04-1895 MB2	<50	<250	83

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-01 1/10
Date Analyzed:	08/13/24	Data File:	081334.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	71	132
Toluene-d8	106	68	139
4-Bromofluorobenzene	99	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10 k	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<5 j
Vinyl chloride	<0.2 k	Dibromochloromethane	<5
Bromomethane	<50 k	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10 k	Ethylbenzene	65
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	87
Hexane	<50	o-Xylene	<10
Methylene chloride	<50 ca	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	12
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	19
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	40
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	150
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	52
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-02
Date Analyzed:	08/14/24	Data File:	081339.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	71	132
Toluene-d8	105	68	139
4-Bromofluorobenzene	96	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1 k	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02 k	Dibromochloromethane	<0.5
Bromomethane	<5 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 k	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	34	o-Xylene	<1
Methylene chloride	5.6 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	38
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	40
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	100
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	31	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	210 ve
Benzene	<0.35	sec-Butylbenzene	5.3
Trichloroethene	<0.5	p-Isopropyltoluene	2.5
1,2-Dichloropropane	1.0	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	6.6
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-02 1/10
Date Analyzed:	08/14/24	Data File:	081411.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)
1,2,4-Trimethylbenzene	240

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-03 1/100
Date Analyzed:	08/13/24	Data File:	081337.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100 k	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<5 j
Vinyl chloride	<2 k	Dibromochloromethane	<50
Bromomethane	<500 k	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100 k	Ethylbenzene	2,800
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	8,700
Hexane	<500	o-Xylene	5,100
Methylene chloride	<500 ca	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	200
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	530
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	1,900
Benzene	<3.5 j	sec-Butylbenzene	<100
Trichloroethene	<5 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,400	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	590
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-04 1/10
Date Analyzed:	08/13/24	Data File:	081335.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10 k	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	100
Vinyl chloride	<0.2 k	Dibromochloromethane	<5
Bromomethane	<50 k	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10 k	Ethylbenzene	1,200
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	2,600
Hexane	<50	o-Xylene	1,400
Methylene chloride	<50 ca	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	27
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	42
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	11	1,3,5-Trimethylbenzene	84
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	320
Benzene	160	sec-Butylbenzene	<10
Trichloroethene	64	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	2,600 ve	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	89
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-04 1/100
Date Analyzed:	08/14/24	Data File:	081412.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb
Toluene	2,700

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-05
Date Analyzed:	08/13/24	Data File:	081333.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	71	132
Toluene-d8	105	68	139
4-Bromofluorobenzene	100	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1 k	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02 k	Dibromochloromethane	<0.5
Bromomethane	<5 k	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 k	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.0
Hexane	<5	o-Xylene	<1
Methylene chloride	<5 ca	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	4.9	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	408136-06 1/100
Date Analyzed:	08/13/24	Data File:	081336.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	97	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100 k	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<5 j
Vinyl chloride	<2 k	Dibromochloromethane	<50
Bromomethane	<500 k	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100 k	Ethylbenzene	2,600
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	7,800
Hexane	<500	o-Xylene	4,600
Methylene chloride	<500 ca	Styrene	150
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	190
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	510
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	1,800
Benzene	<3.5 j	sec-Butylbenzene	<100
Trichloroethene	<5 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,200	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	570
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/13/24	Lab ID:	04-1834 mb
Date Analyzed:	08/13/24	Data File:	081325.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.05 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.035 j	sec-Butylbenzene	<1
Trichloroethene	<0.05 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-01
Date Analyzed:	08/09/24	Data File:	080907.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	11	173
2-Fluorobiphenyl	85	25	128
2,4,6-Tribromophenol	98	10	140
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	25
2-Methylnaphthalene	7.2
1-Methylnaphthalene	4.9
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	0.022
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-02
Date Analyzed:	08/09/24	Data File:	080908.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	102	10	140
Terphenyl-d14	93	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	2.5
2-Methylnaphthalene	15
1-Methylnaphthalene	18
Acenaphthylene	<0.02
Acenaphthene	0.068
Fluorene	0.068
Phenanthrene	0.038
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-03
Date Analyzed:	08/09/24	Data File:	080909.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	91	11	173
2-Fluorobiphenyl	65	25	128
2,4,6-Tribromophenol	99	10	140
Terphenyl-d14	88	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	260 ve
2-Methylnaphthalene	95 ve
1-Methylnaphthalene	54
Acenaphthylene	<0.02
Acenaphthene	0.20
Fluorene	0.24
Phenanthrene	0.24
Anthracene	0.10
Fluoranthene	0.032
Pyrene	0.046
Benz(a)anthracene	0.041
Chrysene	<0.02
Benzo(a)pyrene	0.029
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.044

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-03 1/20
Date Analyzed:	08/10/24	Data File:	081016.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78 d	11	173
2-Fluorobiphenyl	66 d	25	128
2,4,6-Tribromophenol	120 d	10	140
Terphenyl-d14	80 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	340
2-Methylnaphthalene	96

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-04
Date Analyzed:	08/09/24	Data File:	080910.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	11	173
2-Fluorobiphenyl	73	25	128
2,4,6-Tribromophenol	94	10	140
Terphenyl-d14	91	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	49
2-Methylnaphthalene	18
1-Methylnaphthalene	9.1
Acenaphthylene	<0.02
Acenaphthene	0.046
Fluorene	0.041
Phenanthrene	0.059
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-05
Date Analyzed:	08/09/24	Data File:	080911.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	89	11	173
2-Fluorobiphenyl	81	25	128
2,4,6-Tribromophenol	88	10	140
Terphenyl-d14	97	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.023
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-06
Date Analyzed:	08/09/24	Data File:	080912.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	91	11	173
2-Fluorobiphenyl	73	25	128
2,4,6-Tribromophenol	93	10	140
Terphenyl-d14	87	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	300 ve
2-Methylnaphthalene	110 ve
1-Methylnaphthalene	63 ve
Acenaphthylene	<0.02
Acenaphthene	0.23
Fluorene	0.29
Phenanthrene	0.29
Anthracene	0.12
Fluoranthene	0.037
Pyrene	0.048
Benz(a)anthracene	0.040
Chrysene	<0.02
Benzo(a)pyrene	0.027
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.041

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-06 1/20
Date Analyzed:	08/10/24	Data File:	081017.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86 d	11	173
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	116 d	10	140
Terphenyl-d14	82 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	420
2-Methylnaphthalene	120
1-Methylnaphthalene	64

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	04-1890 mb3
Date Analyzed:	08/09/24	Data File:	080906.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	98	11	173
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	76	10	140
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-01
Date Analyzed:	08/10/24	Data File:	408136-01.359
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.8
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-02
Date Analyzed:	08/10/24	Data File:	408136-02.360
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.2
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-03
Date Analyzed:	08/10/24	Data File:	408136-03.361
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22
Lead	3.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-04
Date Analyzed:	08/10/24	Data File:	408136-04.362
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	30
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-05
Date Analyzed:	08/10/24	Data File:	408136-05.363
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.5
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-06
Date Analyzed:	08/10/24	Data File:	408136-06.364
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22
Lead	3.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	I4-650 mb2
Date Analyzed:	08/09/24	Data File:	I4-650 mb2.170
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-01
Date Analyzed:	08/10/24	Data File:	408136-01.346
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.5
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-02
Date Analyzed:	08/10/24	Data File:	408136-02.347
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.2
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-02 x100
Date Analyzed:	08/13/24	Data File:	408136-02 x100.369
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	810

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-03
Date Analyzed:	08/10/24	Data File:	408136-03.348
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	17
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-03 x100
Date Analyzed:	08/13/24	Data File:	408136-03 x100.370
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,400

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-04
Date Analyzed:	08/10/24	Data File:	408136-04.349
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	29
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-04 x500
Date Analyzed:	08/14/24	Data File:	408136-04 x500.127
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	4,000

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-05
Date Analyzed:	08/10/24	Data File:	408136-05.350
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.9
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-06
Date Analyzed:	08/10/24	Data File:	408136-06.351
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	16
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	08/07/24	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	408136-06 x100
Date Analyzed:	08/13/24	Data File:	408136-06 x100.373
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,300

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 408136
Date Extracted:	08/08/24	Lab ID:	I4-651 mb2
Date Analyzed:	08/09/24	Data File:	I4-651 mb2.169
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136
Date Extracted: 08/12/24
Date Analyzed: 08/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-6S 408136-01	<5
MW-8S 408136 -02	5.6
MW-9D 408136 -03	16
MW-17D 408136 -04	88
MW-20D 408136 -05	60
FD-01 408136 -06	16
Method Blank I4-670 MB	<5

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 408153-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	112	65-151	0

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 408153-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	103	30-221
Chloromethane	ug/L (ppb)	10	<10	109	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	110	50-150
Bromomethane	ug/L (ppb)	10	<5	114	50-150
Chloroethane	ug/L (ppb)	10	<1	113	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	50-150
Acetone	ug/L (ppb)	50	<50	46	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	105	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	99	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	101	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	95	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	10-211
Chloroform	ug/L (ppb)	10	<1	96	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	66	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	99	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	98	50-150
Benzene	ug/L (ppb)	10	<0.35	100	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	91	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	98	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	94	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	83	50-150
Toluene	ug/L (ppb)	10	2.0	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	87	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	94	50-150
2-Hexanone	ug/L (ppb)	50	<10	80	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	95	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	85	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	93	50-150
Chlorobenzene	ug/L (ppb)	10	<1	92	50-150
Ethylbenzene	ug/L (ppb)	10	<1	100	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	98	50-150
m,p-Xylene	ug/L (ppb)	20	<2	97	50-150
o-Xylene	ug/L (ppb)	10	<1	100	50-150
Styrene	ug/L (ppb)	10	<1	94	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	101	50-150
Bromoform	ug/L (ppb)	10	<5	84	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromobenzene	ug/L (ppb)	10	<1	95	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	98	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	98	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	103	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	96	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	95	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	91	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	91	50-150
Naphthalene	ug/L (ppb)	10	<1	89	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	95	50-150

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	116	113	46-206	3
Chloromethane	ug/L (ppb)	10	102	100	59-132	2
Vinyl chloride	ug/L (ppb)	10	113	110	64-142	3
Bromomethane	ug/L (ppb)	10	115	111	50-197	4
Chloroethane	ug/L (ppb)	10	112	108	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	104	106	51-159	2
Acetone	ug/L (ppb)	50	46	42	10-140	9
1,1-Dichloroethene	ug/L (ppb)	10	108	105	64-140	3
Hexane	ug/L (ppb)	10	101	98	54-136	3
Methylene chloride	ug/L (ppb)	10	99	99	43-134	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	107	105	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	104	102	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	103	101	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	123	110	64-148	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	104	70-130	2
Chloroform	ug/L (ppb)	10	100	97	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	73	66	47-112	10
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	99	97	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	103	100	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	96	95	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	101	99	70-130	2
Benzene	ug/L (ppb)	10	102	100	70-130	2
Trichloroethene	ug/L (ppb)	10	93	92	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	93	93	70-130	0
Bromodichloromethane	ug/L (ppb)	10	89	90	70-130	1
Dibromomethane	ug/L (ppb)	10	94	94	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	100	93	68-130	7
cis-1,3-Dichloropropene	ug/L (ppb)	10	89	88	69-131	1
Toluene	ug/L (ppb)	10	104	101	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	97	90	70-130	7
1,1,2-Trichloroethane	ug/L (ppb)	10	102	100	70-130	2
2-Hexanone	ug/L (ppb)	50	84	82	45-138	2
1,3-Dichloropropane	ug/L (ppb)	10	102	95	70-130	7
Tetrachloroethene	ug/L (ppb)	10	105	101	70-130	4
Dibromochloromethane	ug/L (ppb)	10	96	93	60-148	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	100	99	70-130	1
Chlorobenzene	ug/L (ppb)	10	101	98	70-130	3
Ethylbenzene	ug/L (ppb)	10	108	105	70-130	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	102	100	70-130	2
m,p-Xylene	ug/L (ppb)	20	106	103	70-130	3
o-Xylene	ug/L (ppb)	10	107	103	70-130	4
Styrene	ug/L (ppb)	10	101	98	70-130	3
Isopropylbenzene	ug/L (ppb)	10	109	103	70-130	6
Bromoform	ug/L (ppb)	10	97	88	69-138	10
n-Propylbenzene	ug/L (ppb)	10	108	105	70-130	3
Bromobenzene	ug/L (ppb)	10	100	97	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	107	103	70-130	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	111	108	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	107	105	70-130	2
2-Chlorotoluene	ug/L (ppb)	10	107	103	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	103	102	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	104	100	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	106	101	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	108	101	70-130	7
p-Isopropyltoluene	ug/L (ppb)	10	108	104	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	106	102	70-130	4
1,4-Dichlorobenzene	ug/L (ppb)	10	101	100	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	105	101	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	101	105	70-130	4
1,2,4-Trichlorobenzene	ug/L (ppb)	10	108	103	70-130	5
Hexachlorobutadiene	ug/L (ppb)	10	108	103	70-130	5
Naphthalene	ug/L (ppb)	10	109	107	70-130	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	107	105	70-130	2

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	60	70	50-104	15
2-Methylnaphthalene	ug/L (ppb)	10	68	80	52-113	16
1-Methylnaphthalene	ug/L (ppb)	10	69	80	51-115	15
Acenaphthylene	ug/L (ppb)	10	81	91	60-114	12
Acenaphthene	ug/L (ppb)	10	76	87	57-110	13
Fluorene	ug/L (ppb)	10	86	97	61-115	12
Phenanthrene	ug/L (ppb)	10	83	91	63-113	9
Anthracene	ug/L (ppb)	10	86	95	65-117	10
Fluoranthene	ug/L (ppb)	10	94	99	68-121	5
Pyrene	ug/L (ppb)	10	86	93	62-133	8
Benz(a)anthracene	ug/L (ppb)	10	92	97	66-131	5
Chrysene	ug/L (ppb)	10	90	96	66-129	6
Benzo(a)pyrene	ug/L (ppb)	10	95	103	66-129	8
Benzo(b)fluoranthene	ug/L (ppb)	10	91	98	55-144	7
Benzo(k)fluoranthene	ug/L (ppb)	10	95	101	58-139	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	112	117	62-136	4
Dibenz(a,h)anthracene	ug/L (ppb)	10	108	114	55-146	5
Benzo(g,h,i)perylene	ug/L (ppb)	10	107	112	58-137	5

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 408069-02 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	97	92	75-125	5
Lead	ug/L (ppb)	10	<10	105	100	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	102	80-120
Lead	ug/L (ppb)	10	98	80-120

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 408088-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	16.2	95 b	92 b	75-125	3 b
Lead	ug/L (ppb)	10	<1	101	101	75-125	0
Manganese	ug/L (ppb)	20	3,500	928 b	0 b	75-125	127 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	80-120
Lead	ug/L (ppb)	10	98	80-120
Manganese	ug/L (ppb)	20	97	80-120

Date of Report: 08/19/24
Date Received: 08/07/24
Project: Whidbey Marine, F&BI 408136

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 408136-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	92	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

408136

SAMPLE CHAIN OF COUSTODY 08/07/24 F2/K4/VW4

Page # 1 of 1

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone ______ Email Hgood@haleyaldrich

SAMPLERS (signature)	
PROJECT NAME Whidbey Marine	PO #
REMARKS Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH
Rush charges authorized by:
SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	anions/Alkalinity ~~BTEX EPA 8021~~	Ammonia ~~NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	sulfide ~~PCBs EPA 8082~~	Total & dissolve lead & arsenic	TSS	EDB, EDC, MTBE	methane, ethane, ethene	Notes
MW-6S	01 A-L	8/6/24	1100	W	12	X	X			X	X		X	X	X		Nitrate short hold
MW-8S	02 A-R	↓	1250	↓	18	↓	↓	X	X	↓	↓	X	↓	↓	↓	X	
MW-9D	03 A-S	↓	1235	↓	19	↓	↓	X	X	↓	↓	X	↓	↓	↓	X	
MW-17D	04 A-R	↓	1450	↓	18	↓	↓	X	X	↓	↓	X	↓	↓	↓	X	
MW-20D	05 A-L	↓	1045	↓	12	↓	↓			↓	↓		↓	↓	↓		
FD-01	06 A-Q	↓	1200	↓	17	↓	↓	X	X	↓	↓	X	↓	↓	↓	X	
					AP 08/07												dissolved ferrous manganese for MW-8S, -9D, -17D, FD-01
						Samples received at 4 °C											
																	refer to email for analysis

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Zach Stephens	H+A	8/7/24	1505
Received by:		Anh Phan	FBI	08/07/24	15:05
Relinquished by:					
Received by:					

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 408136 CLIENT H+A INITIALS/ DATE: AP 08/07/24

If custody seals are present on cooler, are they intact? ☒ NA ☐ YES ☐ NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☒ YES ☐ NO

How did samples arrive?
☒ Over the Counter ☐ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☒ YES ☐ NO Initials/ Date: AP 08/07/24
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☐ YES ☒ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☒ YES ☐ NO

Were appropriate sample containers used? ☒ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☒ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☐ YES ☒ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☒ Yes ☐ No	☐ Not on COC/label
Date Sampled	☒ Yes ☐ No	☐ Not on COC/label
Time Sampled	☐ Yes ☒ No (See below)	☐ Not on COC/label
# of Containers	☐ Yes ☒ No Not on COC. Added at lab.	
Relinquished	☒ Yes ☐ No	
Requested analysis	☒ Yes ☐ On Hold	

Other comments (use a separate page if needed)
Time on label 12:40 (-03A-S)
~~14:50~~ 15:05 (-04A-R)
12:40 (-06A-Q)
There is headspace on 1 VOA ~~RWQ~~ (03M)

Air Samples: Were any additional canisters/tubes received? ☒ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 408136, E-334
Work Order Number: 2408117

August 14, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 4 sample(s) on 8/7/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by EPA 310.2
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *08/14/2024*

CLIENT: Friedman & Bruya
Project: 408136
Work Order: 2408117

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2408117-001	MW-8S	08/06/2024 12:00 AM	08/07/2024 3:45 PM
2408117-002	MW-9D	08/06/2024 12:00 AM	08/07/2024 3:45 PM
2408117-003	MW-17D	08/06/2024 12:00 AM	08/07/2024 3:45 PM
2408117-004	FD-01	08/06/2024 12:00 AM	08/07/2024 3:45 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2408117**

Date: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408136

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2408117**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408136

Lab ID: 2408117-001 **Collection Date:** 8/6/2024
Client Sample ID: **MW-8S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	ND	0.00500		mg/L	1	8/9/2024 11:13:00 AM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:13:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:13:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	34.2	2.00	D	mg/L	10	8/8/2024 8:59:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 9:12:00 PM
Nitrate (as N)	2.39	0.400	D	mg/L	2	8/7/2024 9:12:00 PM
Sulfate	23.7	2.00	D*	mg/L	2	8/7/2024 9:12:00 PM
NOTES:						
* - Associated LCS is below acceptance criteria. Result may be low-biased.						
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	189	25.0	D	mg/L	10	8/12/2024 5:21:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 11:52:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	0.0731	0.0500		mg/L	1	8/12/2024 10:46:05 AM

Analytical Report

Work Order: **2408117**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408136

Lab ID: 2408117-002 **Collection Date:** 8/6/2024
Client Sample ID: **MW-9D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	ND	0.00500		mg/L	1	8/9/2024 11:36:00 AM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:36:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:36:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	29.8	2.00	D	mg/L	10	8/8/2024 9:22:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 9:35:00 PM
Nitrate (as N)	ND	0.400	D	mg/L	2	8/7/2024 9:35:00 PM
Sulfate	8.57	2.00	D*	mg/L	2	8/7/2024 9:35:00 PM
NOTES:						
* - Associated LCS is below acceptance criteria. Result may be low-biased.						
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	43.9	2.50		mg/L	1	8/12/2024 4:45:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 12:07:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	0.253	0.0500		mg/L	1	8/12/2024 10:46:05 AM

Analytical Report

Work Order: **2408117**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408136

Lab ID: 2408117-003 **Collection Date:** 8/6/2024
Client Sample ID: **MW-17D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	0.742	0.0250	D	mg/L	5	8/9/2024 12:22:00 PM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:40:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:40:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	27.6	2.00	D	mg/L	10	8/8/2024 9:45:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 9:58:00 PM
Nitrate (as N)	ND	0.400	D	mg/L	2	8/7/2024 9:58:00 PM
Sulfate	ND	2.00	D*	mg/L	2	8/7/2024 9:58:00 PM
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	221	25.0	D	mg/L	10	8/12/2024 5:24:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 12:12:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	0.108	0.0500		mg/L	1	8/12/2024 10:46:05 AM

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Analytical Report

Work Order: **2408117**
Date Reported: **8/14/2024**

CLIENT: Friedman & Bruya
Project: 408136

Lab ID: 2408117-004 **Collection Date:** 8/6/2024
Client Sample ID: **FD-01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	ND	0.00500		mg/L	1	8/9/2024 11:43:00 AM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:43:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:43:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44773		Analyst: SS
Chloride	29.2	2.00	D	mg/L	10	8/8/2024 10:08:00 PM
Nitrite (as N)	ND	0.400	D	mg/L	2	8/7/2024 10:21:00 PM
Nitrate (as N)	ND	0.400	D	mg/L	2	8/7/2024 10:21:00 PM
Sulfate	8.50	2.00	D*	mg/L	2	8/7/2024 10:21:00 PM
NOTES:						
* - Associated LCS is below acceptance criteria. Result may be low-biased.						
Total Alkalinity by EPA 310.2				Batch ID: R93586		Analyst: NR
Alkalinity, Total (As CaCO3)	46.2	2.50		mg/L	1	8/12/2024 5:03:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 12:35:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	0.313	0.0500		mg/L	1	8/12/2024 10:46:05 AM

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-93586**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93586**
Client ID: **MBLKW**	Batch ID: **R93586**		Analysis Date: **8/12/2024**	SeqNo: **1953770**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-93586**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93586**
Client ID: **LCSW**	Batch ID: **R93586**		Analysis Date: **8/12/2024**	SeqNo: **1953771**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	26.6	2.50	25.00	0	106	83.8	121				

Sample ID: **2408076-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93586**
Client ID: **BATCH**	Batch ID: **R93586**		Analysis Date: **8/12/2024**	SeqNo: **1953773**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	47.0	2.50						47.90	1.90	20	

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-44810**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **MBLKW**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954284**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-44810**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **LCSW**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954285**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.527	0.150	0.5000	0	105	83.7	113.7				

Sample ID: **2408076-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **BATCH**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408076-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **BATCH**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954288**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2408076-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93611**
Client ID: **BATCH**	Batch ID: **44810**		Analysis Date: **8/13/2024**	SeqNo: **1954289**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150	0		30	S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2408179-002BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/12/2024** RunNo: **93611**
Client ID: **BATCH** Batch ID: **44810** Analysis Date: **8/13/2024** SeqNo: **1954302**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408179-002BMS** SampType: **MS** Units: **mg/L** Prep Date: **8/12/2024** RunNo: **93611**
Client ID: **BATCH** Batch ID: **44810** Analysis Date: **8/13/2024** SeqNo: **1954303**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.337	0.150	0.5000	0	67.4	12.2	150				

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-44773** SampType: **MBLK** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **MBLKW** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953363**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2408063-002ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953366**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.04	0.200						1.009	3.03	20	
Nitrite (as N)	ND	0.200						0		20	HQ
Nitrate (as N)	ND	0.200						0		20	H
Sulfate	1.20	1.00						1.161	2.89	20	*

NOTES:
Q - Associated calibration verification is below acceptance criteria. Result may be low-biased.
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Sample ID: **2408063-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953367**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.82	0.200	0.7500	1.009	109	80	120				
Nitrite (as N)	0.777	0.200	0.7500	0	104	80	120				H
Nitrate (as N)	0.761	0.200	0.7500	0	101	80	120				H
Sulfate	4.89	1.00	3.750	1.161	99.5	80	120				

Sample ID: **2408063-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953368**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.82	0.200	0.7500	1.009	108	80	120	1.823	0.275	20	

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2408063-002AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953368**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.773	0.200	0.7500	0	103	80	120	0.7770	0.516	20	H
Nitrate (as N)	0.760	0.200	0.7500	0	101	80	120	0.7610	0.131	20	H
Sulfate	4.88	1.00	3.750	1.161	99.2	80	120	4.894	0.266	20	

Sample ID: **2408097-002ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953382**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	16.8	0.400						17.00	1.17	20	DE
Nitrite (as N)	ND	0.400						0		20	D
Nitrate (as N)	ND	0.400						0		20	D
Sulfate	27.8	2.00						28.14	1.41	20	D

Sample ID: **2408097-002AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/7/2024** RunNo: **93567**
Client ID: **BATCH** Batch ID: **44773** Analysis Date: **8/7/2024** SeqNo: **1953383**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	17.9	0.400	1.500	17.00	57.5	80	120				DES
Nitrite (as N)	1.50	0.400	1.500	0	99.7	80	120				D
Nitrate (as N)	1.66	0.400	1.500	0.2020	96.9	80	120				D
Sulfate	34.9	2.00	7.500	28.14	89.8	80	120				D

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **LCS-RR** SampType: **LCS** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93567**
Client ID: **LCSW** Batch ID: **44773** Analysis Date: **8/8/2024** SeqNo: **1953404**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.688	0.200	0.7500	0	91.7	90	110				
Nitrite (as N)	0.699	0.200	0.7500	0	93.2	90	110				
Nitrate (as N)	0.722	0.200	0.7500	0	96.3	90	110				

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-RR** SampType: **LCS** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93567**
Client ID: **LCSW** Batch ID: **44773** Analysis Date: **8/8/2024** SeqNo: **1953404**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.30	1.00	3.750	0	88.1	90	110				S

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R93564**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **MBLKW**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953246**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R93564**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **LCSW**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953247**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.207	0.0500	0.2000	0	104	80	120				

Sample ID: **2408076-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953251**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.278	0.0500						0.2619	5.98	20	

Sample ID: **2408076-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953252**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.433	0.0500	0.2000	0.2619	85.7	80	120				

Sample ID: **2408076-001CMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953253**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.430	0.0500	0.2000	0.2619	83.8	80	120	0.4333	0.864	20	

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2408139-002BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953264**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2408139-002BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953265**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.174	0.0500	0.2000	0	86.9	80	120				

Work Order: 2408117
CLIENT: Friedman & Bruya
Project: 408136

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R93551**	SampType: **LCS**	Units: **ppmv**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **LCSW**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952884**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	930	0.00500	1,000	0	93.0	73.6	124				
Ethene	922	0.0100	1,000	0	92.2	76.3	122				
Ethane	945	0.0100	1,000	0	94.5	76.1	123				

Sample ID: **MB-R93551**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **MBLKW**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2408117-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **MW-8S**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952870**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2408117
Logged by:	Morgan Wilson	Date Received:	8/7/2024 3:45:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	5.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2408117

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Alliance Technical Group

PROJECT NAME/NO.	PO #
408136	E-334

REMARKS

EIM and EQuIS 4

TURNAROUND TIME
☒ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Anions	Alkalinity	Ammonia	Sulfide	RSK MEE						Notes
MW-8S		8/6/2024		water	1	x	x	x	x	x						Anions= nitrate
MW-9D		8/6/2024		water	1	x	x	x	x	x						nitrite, chloride
MW-17D		8/6/2024		water	1	x	x	x	x	x						sulfate
FD-01		8/6/2024		water	1	x	x	x	x	x						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/7/24	1511
Received by:		Jade Hawthorne	ATG	1545	8/7/24
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

August 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on August 8, 2024 from the Whidbey Marine, 0204475-001 F&BI 408153 project. There are 29 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0819R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 8, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine, F&BI 408153 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
408153 -01	MW-2S
408153 -02	MW-3S
408153 -03	Trip Blank

Samples MW-2S and MW-3S were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 6020B method blank arsenic calibration standard exceeded the acceptance criteria. The metal was not detected, therefore this did not represent an out of control condition, and the results are not considered estimates.

The sample MW-2S was filtered at the laboratory for dissolved metals. The data were qualified accordingly.

The 6020B dissolved iron calibration verification was outside of control limits. In addition, the laboratory control sample exceeded control limits associated with MW-3S. The data were qualified accordingly.

All quality control requirements were acceptable.

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153
Date Extracted: 08/09/24
Date Analyzed: 08/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-2S 408153-01	<100	96
MW-3S 408153-02	<100	104
Method Blank 04-1745 MB	<100	101

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153
Date Extracted: 08/09/24
Date Analyzed: 08/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-2S 408153-01 1/1.6	120	<400	87
MW-3S 408153-02	<50	<250	91
Method Blank 04-1895 MB2	<50	<250	83

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24	Lab ID:	408153-01
Date Analyzed:	08/13/24	Data File:	081344.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24	Lab ID:	408153-02
Date Analyzed:	08/13/24	Data File:	081345.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	2.0	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24	Lab ID:	04-1834 mb
Date Analyzed:	08/13/24	Data File:	081325.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/08/24	Lab ID:	408153-01
Date Analyzed:	08/09/24	Data File:	080914.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	94	10	140
Terphenyl-d14	91	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/08/24	Lab ID:	408153-02
Date Analyzed:	08/09/24	Data File:	080915.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	99	11	173
2-Fluorobiphenyl	96	25	128
2,4,6-Tribromophenol	97	10	140
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.023
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/08/24	Lab ID:	04-1890 mb3
Date Analyzed:	08/09/24	Data File:	080906.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	98	11	173
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	76	10	140
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/09/24	Lab ID:	408153-01
Date Analyzed:	08/10/24	Data File:	408153-01.333
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.3
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/09/24	Lab ID:	408153-02
Date Analyzed:	08/10/24	Data File:	408153-02.334
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/09/24	Lab ID:	I4-660 mb
Date Analyzed:	08/09/24	Data File:	I4-660 mb.171
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1 k
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2S f	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/15/24 10:40	Lab ID:	408153-01
Date Analyzed:	08/15/24 16:06:46	Data File:	408153-01.119
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.6
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2S f	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/15/24 10:40	Lab ID:	408153-01 rr
Date Analyzed:	08/19/24 11:55:49	Data File:	408153-01 rr.059
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	160 ca
Manganese	4.1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24	Lab ID:	408153-02
Date Analyzed:	08/13/24	Data File:	408153-02.174
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	08/08/24	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24 13:15	Lab ID:	408153-02 rr
Date Analyzed:	08/19/24 11:59:21	Data File:	408153-02 rr.060
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	94 jl ca
Manganese	2.8

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/15/24 10:40	Lab ID:	I4-677 mb
Date Analyzed:	08/15/24 15:59:44	Data File:	I4-677 mb.117
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Iron	<50
Lead	<1
Manganese	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 408153
Date Extracted:	08/13/24	Lab ID:	I4-672 mb
Date Analyzed:	08/13/24	Data File:	I4-672 mb.149
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Iron	<50
Lead	<1
Manganese	<1

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153
Date Extracted: 08/12/24
Date Analyzed: 08/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-2S 408153-01	<5
MW-3S 408153 -02	6.8
Method Blank I4-0670 MB	<5

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 408153-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	112	65-151	0

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 408153-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	103	30-221
Chloromethane	ug/L (ppb)	10	<10	109	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	110	50-150
Bromomethane	ug/L (ppb)	10	<5	114	50-150
Chloroethane	ug/L (ppb)	10	<1	113	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	50-150
Acetone	ug/L (ppb)	50	<50	46	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	105	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	99	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	101	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	95	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	10-211
Chloroform	ug/L (ppb)	10	<1	96	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	66	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	99	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	98	50-150
Benzene	ug/L (ppb)	10	<0.35	100	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	91	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	98	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	94	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	83	50-150
Toluene	ug/L (ppb)	10	2.0	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	87	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	94	50-150
2-Hexanone	ug/L (ppb)	50	<10	80	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	95	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	85	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	93	50-150
Chlorobenzene	ug/L (ppb)	10	<1	92	50-150
Ethylbenzene	ug/L (ppb)	10	<1	100	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	98	50-150
m,p-Xylene	ug/L (ppb)	20	<2	97	50-150
o-Xylene	ug/L (ppb)	10	<1	100	50-150
Styrene	ug/L (ppb)	10	<1	94	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	101	50-150
Bromoform	ug/L (ppb)	10	<5	84	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromobenzene	ug/L (ppb)	10	<1	95	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	98	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	98	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	103	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	96	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	95	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	94	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	91	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	91	50-150
Naphthalene	ug/L (ppb)	10	<1	89	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	95	50-150

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	116	113	46-206	3
Chloromethane	ug/L (ppb)	10	102	100	59-132	2
Vinyl chloride	ug/L (ppb)	10	113	110	64-142	3
Bromomethane	ug/L (ppb)	10	115	111	50-197	4
Chloroethane	ug/L (ppb)	10	112	108	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	104	106	51-159	2
Acetone	ug/L (ppb)	50	46	42	10-140	9
1,1-Dichloroethene	ug/L (ppb)	10	108	105	64-140	3
Hexane	ug/L (ppb)	10	101	98	54-136	3
Methylene chloride	ug/L (ppb)	10	99	99	43-134	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	107	105	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	104	102	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	103	101	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	123	110	64-148	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	106	104	70-130	2
Chloroform	ug/L (ppb)	10	100	97	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	73	66	47-112	10
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	99	97	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	103	100	70-130	3
1,1-Dichloropropene	ug/L (ppb)	10	96	95	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	101	99	70-130	2
Benzene	ug/L (ppb)	10	102	100	70-130	2
Trichloroethene	ug/L (ppb)	10	93	92	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	93	93	70-130	0
Bromodichloromethane	ug/L (ppb)	10	89	90	70-130	1
Dibromomethane	ug/L (ppb)	10	94	94	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	100	93	68-130	7
cis-1,3-Dichloropropene	ug/L (ppb)	10	89	88	69-131	1
Toluene	ug/L (ppb)	10	104	101	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	97	90	70-130	7
1,1,2-Trichloroethane	ug/L (ppb)	10	102	100	70-130	2
2-Hexanone	ug/L (ppb)	50	84	82	45-138	2
1,3-Dichloropropane	ug/L (ppb)	10	102	95	70-130	7
Tetrachloroethene	ug/L (ppb)	10	105	101	70-130	4
Dibromochloromethane	ug/L (ppb)	10	96	93	60-148	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	100	99	70-130	1
Chlorobenzene	ug/L (ppb)	10	101	98	70-130	3
Ethylbenzene	ug/L (ppb)	10	108	105	70-130	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	102	100	70-130	2
m,p-Xylene	ug/L (ppb)	20	106	103	70-130	3
o-Xylene	ug/L (ppb)	10	107	103	70-130	4
Styrene	ug/L (ppb)	10	101	98	70-130	3
Isopropylbenzene	ug/L (ppb)	10	109	103	70-130	6
Bromoform	ug/L (ppb)	10	97	88	69-138	10
n-Propylbenzene	ug/L (ppb)	10	108	105	70-130	3
Bromobenzene	ug/L (ppb)	10	100	97	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	107	103	70-130	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	111	108	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	107	105	70-130	2
2-Chlorotoluene	ug/L (ppb)	10	107	103	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	103	102	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	104	100	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	106	101	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	108	101	70-130	7
p-Isopropyltoluene	ug/L (ppb)	10	108	104	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	106	102	70-130	4
1,4-Dichlorobenzene	ug/L (ppb)	10	101	100	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	105	101	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	101	105	70-130	4
1,2,4-Trichlorobenzene	ug/L (ppb)	10	108	103	70-130	5
Hexachlorobutadiene	ug/L (ppb)	10	108	103	70-130	5
Naphthalene	ug/L (ppb)	10	109	107	70-130	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	107	105	70-130	2

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	60	70	50-104	15
2-Methylnaphthalene	ug/L (ppb)	10	68	80	52-113	16
1-Methylnaphthalene	ug/L (ppb)	10	69	80	51-115	15
Acenaphthylene	ug/L (ppb)	10	81	91	60-114	12
Acenaphthene	ug/L (ppb)	10	76	87	57-110	13
Fluorene	ug/L (ppb)	10	86	97	61-115	12
Phenanthrene	ug/L (ppb)	10	83	91	63-113	9
Anthracene	ug/L (ppb)	10	86	95	65-117	10
Fluoranthene	ug/L (ppb)	10	94	99	68-121	5
Pyrene	ug/L (ppb)	10	86	93	62-133	8
Benz(a)anthracene	ug/L (ppb)	10	92	97	66-131	5
Chrysene	ug/L (ppb)	10	90	96	66-129	6
Benzo(a)pyrene	ug/L (ppb)	10	95	103	66-129	8
Benzo(b)fluoranthene	ug/L (ppb)	10	91	98	55-144	7
Benzo(k)fluoranthene	ug/L (ppb)	10	95	101	58-139	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	112	117	62-136	4
Dibenz(a,h)anthracene	ug/L (ppb)	10	108	114	55-146	5
Benzo(g,h,i)perylene	ug/L (ppb)	10	107	112	58-137	5

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 408161-44 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	101	98	75-125	3
Lead	ug/L (ppb)	10	<1	97	95	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	102	80-120
Lead	ug/L (ppb)	10	95	80-120

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 408153-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.56	99 b	102 b	75-125	3 b
Iron	ug/L (ppb)	100	125	84 b	95 b	75-125	12 b
Lead	ug/L (ppb)	10	<1	101	104	75-125	3
Manganese	ug/L (ppb)	20	4.02	100 b	104 b	75-125	4 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Iron	ug/L (ppb)	100	94	80-120
Lead	ug/L (ppb)	10	96	80-120
Manganese	ug/L (ppb)	20	99	80-120

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 408153-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.06	95 b	92 b	75-125	3 b
Iron	ug/L (ppb)	100	87.5	104 b	81 b	75-125	25 b
Lead	ug/L (ppb)	10	<1	102	98	75-125	4
Manganese	ug/L (ppb)	20	2.93	103	97	75-125	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	80-120
Iron	ug/L (ppb)	100	121 vo	80-120
Lead	ug/L (ppb)	10	97	80-120
Manganese	ug/L (ppb)	20	101	80-120

Date of Report: 08/19/24
Date Received: 08/08/24
Project: Whidbey Marine, F&BI 408153

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 408136-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

408153

SAMPLE CHAIN OF CUSTODY 08/08/24 F2/K1/VW2

Page # 1 of 1

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyAldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB, EDC MTBE	TSS	Total & dissolved lead & arsenic	Geochem*	Notes
MW-25	01A-L	8/7/24	1030	W	12	X	X			X	X		X	X	X	X	limited bottles MW-25
MW-35	02A-R	"	1315	W	18	X	X			X	X		X	X	X	X	
Trip Blank	03A-B	–	–	Water	2												Added at lab AP 08/08/24
																	geochem: Ammonia,
																	sulfide, Anions + Alk.
																	dissolved methane,
																	ethane, ethene,
																	dissolved mang. & iron

-NO DISS METALS ON -01 Notes AP 8/8/24

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	8/8/24	1045
Received by:	Eric Yodin	F+B	8/8/24	1045
Relinquished by:				
Received by:		Samples received at 4 °C		

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 408153 CLIENT K/QA INITIALS/ DATE: 8/8/21

If custody seals are present on cooler, are they intact? ☑ NA ☐ YES ☐ NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☑ Over the Counter ☐ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO Initials/ Date: AP 08/08/24
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☑ Yes ☐ No	☐ Not on COC/label
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	☐ Yes ☑ No	Added Trip Blank at lab.
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☐ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 408153, E-355
Work Order Number: 2408139

August 16, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 2 sample(s) on 8/8/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by EPA 310.2
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *08/16/2024*

CLIENT: Friedman & Bruya
Project: 408153
Work Order: 2408139

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2408139-001	MW-2S	08/07/2024 10:30 AM	08/08/2024 3:32 PM
2408139-002	MW-3S	08/07/2024 1:15 PM	08/08/2024 3:32 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2408139**

Date: **8/16/2024**

CLIENT: Friedman & Bruya
Project: 408153

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2408139**
Date Reported: **8/16/2024**

CLIENT: Friedman & Bruya
Project: 408153

Lab ID: 2408139-001 **Collection Date:** 8/7/2024 10:30:00 AM
Client Sample ID: **MW-2S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	ND	0.00500		mg/L	1	8/9/2024 11:45:00 AM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:45:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:45:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44836		Analyst: OP
Chloride	26.6	1.00	D	mg/L	5	8/15/2024 3:07:00 AM
Nitrite (as N)	ND	2.00	DQ*	mg/L	10	8/9/2024 10:53:00 AM
Nitrite (as N)	ND	1.00	DH	mg/L	5	8/15/2024 3:07:00 AM
Nitrate (as N)	3.70	2.00	D	mg/L	10	8/9/2024 10:53:00 AM
Sulfate	21.1	5.00	D	mg/L	5	8/15/2024 3:07:00 AM

NOTES:
Q - Associated calibration verification is below acceptance criteria (88.3%, nominal 90-110). Result may be low-biased.
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	2.24	0.700		mg/L	1	8/14/2024 3:58:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93661		Analyst: NR
Alkalinity, Total (As CaCO3)	150	12.5	D	mg/L	5	8/15/2024 12:14:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 12:39:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	8/12/2024 10:46:05 AM

Analytical Report

Work Order: **2408139**
Date Reported: **8/16/2024**

CLIENT: Friedman & Bruya
Project: 408153

Lab ID: 2408139-002 **Collection Date:** 8/7/2024 1:15:00 PM
Client Sample ID: **MW-3S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R93551		Analyst: CO
Methane	ND	0.00500		mg/L	1	8/9/2024 11:47:00 AM
Ethene	ND	0.0100		mg/L	1	8/9/2024 11:47:00 AM
Ethane	ND	0.0100		mg/L	1	8/9/2024 11:47:00 AM
Ion Chromatography by EPA 300.0				Batch ID: 44836		Analyst: OP
Chloride	20.6	1.00	D	mg/L	5	8/15/2024 3:31:00 AM
Nitrite (as N)	ND	2.00	DQ*	mg/L	10	8/9/2024 11:16:00 AM
Nitrite (as N)	ND	1.00	DH	mg/L	5	8/15/2024 3:31:00 AM
Nitrate (as N)	7.56	2.00	D	mg/L	10	8/9/2024 11:16:00 AM
Sulfate	17.9	5.00	D	mg/L	5	8/15/2024 3:31:00 AM

NOTES:
Q - Associated calibration verification is below acceptance criteria (88.3%, nominal 90-110). Result may be low-biased.
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Total Organic Carbon by SM 5310C				Batch ID: R93616		Analyst: SS
Total Organic Carbon	1.45	0.700		mg/L	1	8/14/2024 4:20:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R93661		Analyst: NR
Alkalinity, Total (As CaCO3)	134	12.5	D	mg/L	5	8/15/2024 12:17:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 44810		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	8/13/2024 12:44:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R93564		Analyst: SLL
Sulfide	ND	0.0500		mg/L	1	8/12/2024 10:46:05 AM

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-93661**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/15/2024**	RunNo: **93661**
Client ID: **MBLKW**	Batch ID: **R93661**		Analysis Date: **8/15/2024**	SeqNo: **1955483**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-93661**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/15/2024**	RunNo: **93661**
Client ID: **LCSW**	Batch ID: **R93661**		Analysis Date: **8/15/2024**	SeqNo: **1955484**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	28.2	2.50	25.00	0	113	83.8	121				

Sample ID: **2408124-009BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/15/2024**	RunNo: **93661**
Client ID: **BATCH**	Batch ID: **R93661**		Analysis Date: **8/15/2024**	SeqNo: **1955486**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	12.5	2.50						11.60	7.47	20	

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-44810**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93611**		
Client ID: **MBLKW**	Batch ID: **44810**					Analysis Date: **8/13/2024**		SeqNo: **1954284**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-44810**	SampType: **LCS**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93611**		
Client ID: **LCSW**	Batch ID: **44810**					Analysis Date: **8/13/2024**		SeqNo: **1954285**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.527	0.150	0.5000	0	105	83.7	113.7				

Sample ID: **2408076-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93611**		
Client ID: **BATCH**	Batch ID: **44810**					Analysis Date: **8/13/2024**		SeqNo: **1954287**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408179-002BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93611**		
Client ID: **BATCH**	Batch ID: **44810**					Analysis Date: **8/13/2024**		SeqNo: **1954302**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2408179-002BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93611**		
Client ID: **BATCH**	Batch ID: **44810**					Analysis Date: **8/13/2024**		SeqNo: **1954303**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.337	0.150	0.5000	0	67.4	12.2	150				

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-44790**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/8/2024**	RunNo: **93684**
Client ID: **MBLKW**	Batch ID: **44790**		Analysis Date: **8/9/2024**	SeqNo: **1956269**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									

Sample ID: **LCS-44790**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/8/2024**	RunNo: **93684**
Client ID: **LCSW**	Batch ID: **44790**		Analysis Date: **8/9/2024**	SeqNo: **1956270**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.668	0.200	0.7500	0	89.1	90	110				S
Nitrate (as N)	0.714	0.200	0.7500	0	95.2	90	110				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2408124-009BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/8/2024**	RunNo: **93684**
Client ID: **BATCH**	Batch ID: **44790**		Analysis Date: **8/9/2024**	SeqNo: **1956272**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	H*
Nitrate (as N)	2.05	0.200						2.038	0.733	20	H

NOTES:
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Sample ID: **2408124-009BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/8/2024**	RunNo: **93684**
Client ID: **BATCH**	Batch ID: **44790**		Analysis Date: **8/9/2024**	SeqNo: **1956273**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.743	0.200	0.7500	0	99.1	80	120				H
Nitrate (as N)	2.83	0.200	0.7500	2.038	106	80	120				H

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2408124-009BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93684**
Client ID: **BATCH** Batch ID: **44790** Analysis Date: **8/9/2024** SeqNo: **1956282**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.756	0.200	0.7500	0	101	80	120	0.7430	1.73	20	H
Nitrate (as N)	2.83	0.200	0.7500	2.038	106	80	120	2.832	0	20	H

Sample ID: **2408139-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93684**
Client ID: **MW-3S** Batch ID: **44790** Analysis Date: **8/9/2024** SeqNo: **1956278**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	2.00						0		20	DQ*
Nitrate (as N)	7.36	2.00						7.560	2.68	20	D

NOTES:
Q - Associated calibration verification is below acceptance criteria. Result may be low-biased.
* - Associated LCS is below acceptance criteria. Result may be low-biased.

Sample ID: **2408139-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **8/8/2024** RunNo: **93684**
Client ID: **MW-3S** Batch ID: **44790** Analysis Date: **8/9/2024** SeqNo: **1956279**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	7.25	2.00	7.500	0	96.7	80	120				D
Nitrate (as N)	15.6	2.00	7.500	7.560	107	80	120				D

Sample ID: **LCS-44836** SampType: **LCS** Units: **mg/L** Prep Date: **8/13/2024** RunNo: **93626**
Client ID: **LCSW** Batch ID: **44836** Analysis Date: **8/14/2024** SeqNo: **1955943**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.728	0.200	0.7500	0	97.1	90	110				
Nitrite (as N)	0.713	0.200	0.7500	0	95.1	90	110				
Sulfate	3.58	1.00	3.750	0	95.5	90	110				

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-44836**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93626**		
Client ID: **MBLKW**	Batch ID: **44836**					Analysis Date: **8/14/2024**		SeqNo: **1955945**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2408189-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93626**		
Client ID: **BATCH**	Batch ID: **44836**					Analysis Date: **8/14/2024**		SeqNo: **1955947**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.11	0.200						2.078	1.62	20	
Nitrite (as N)	ND	0.200						0		20	
Sulfate	2.28	1.00						2.217	2.80	20	

Sample ID: **2408189-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93626**		
Client ID: **BATCH**	Batch ID: **44836**					Analysis Date: **8/14/2024**		SeqNo: **1955948**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.91	0.200	0.7500	2.078	111	80	120				
Nitrite (as N)	0.721	0.200	0.7500	0	96.1	80	120				
Sulfate	6.10	1.00	3.750	2.217	104	80	120				

Sample ID: **2408189-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **8/13/2024**		RunNo: **93626**		
Client ID: **BATCH**	Batch ID: **44836**					Analysis Date: **8/14/2024**		SeqNo: **1955973**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.91	0.200	0.7500	2.078	111	80	120	2.908	0.206	20	
Nitrite (as N)	0.718	0.200	0.7500	0	95.7	80	120	0.7210	0.417	20	
Sulfate	6.10	1.00	3.750	2.217	103	80	120	6.100	0.0820	20	

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2408124-015BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/13/2024** RunNo: **93626**
Client ID: **BATCH** Batch ID: **44836** Analysis Date: **8/14/2024** SeqNo: **1955977**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	17.8	0.200						17.83	0.168	20	E
Nitrite (as N)	ND	0.200						0		20	
Sulfate	ND	1.00						0		20	

Sample ID: **2408124-015BMS** SampType: **MS** Units: **mg/L** Prep Date: **8/13/2024** RunNo: **93626**
Client ID: **BATCH** Batch ID: **44836** Analysis Date: **8/14/2024** SeqNo: **1955980**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.2	0.200	0.7500	17.83	42.8	80	120				ES
Nitrite (as N)	0.696	0.200	0.7500	0	92.8	80	120				
Sulfate	3.58	1.00	3.750	0	95.4	80	120				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R93564**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **MBLKW**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953246**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R93564**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **LCSW**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953247**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.207	0.0500	0.2000	0	104	80	120				

Sample ID: **2408076-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953251**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.278	0.0500						0.2619	5.98	20	

Sample ID: **2408076-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953252**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.433	0.0500	0.2000	0.2619	85.7	80	120				

Sample ID: **2408076-001CMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/12/2024**	RunNo: **93564**
Client ID: **BATCH**	Batch ID: **R93564**		Analysis Date: **8/12/2024**	SeqNo: **1953253**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.430	0.0500	0.2000	0.2619	83.8	80	120	0.4333	0.864	20	

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2408139-002BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93564**			
Client ID: **MW-3S**	Batch ID: **R93564**					Analysis Date: **8/12/2024**		SeqNo: **1953264**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2408139-002BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **8/12/2024**		RunNo: **93564**			
Client ID: **MW-3S**	Batch ID: **R93564**					Analysis Date: **8/12/2024**		SeqNo: **1953265**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.174	0.0500	0.2000	0	86.9	80	120				

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **LCS**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/13/2024**	RunNo: **93616**
Client ID: **LCSW**	Batch ID: **R93616**		Analysis Date: **8/13/2024**	SeqNo: **1954406**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	24.1	0.700	25.00	0	96.4	87.6	109				

Sample ID: **MB**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **MBLKW**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954408**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2408076-001DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **BATCH**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954410**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.3	0.700						11.29	0.168	20	

Sample ID: **2408076-001DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **BATCH**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954411**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	35.6	0.700	25.00	11.29	97.3	76.5	111				

Sample ID: **2408076-001DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/14/2024**	RunNo: **93616**
Client ID: **BATCH**	Batch ID: **R93616**		Analysis Date: **8/14/2024**	SeqNo: **1954412**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	34.5	0.700	25.00	11.29	92.8	76.5	111	35.61	3.18	30	

Work Order: 2408139
CLIENT: Friedman & Bruya
Project: 408153

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R93551**	SampType: **LCS**	Units: **ppmv**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **LCSW**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952884**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	930	0.00500	1,000	0	93.0	73.6	124				
Ethene	922	0.0100	1,000	0	92.2	76.3	122				
Ethane	945	0.0100	1,000	0	94.5	76.1	123				

Sample ID: **MB-R93551**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **MBLKW**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2408117-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **8/9/2024**	RunNo: **93551**
Client ID: **BATCH**	Batch ID: **R93551**		Analysis Date: **8/9/2024**	SeqNo: **1952870**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2408139
Logged by:	Morgan Wilson	Date Received:	8/8/2024 3:32:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☑ No ☐ NA ☐

Person Notified:	Michael Erdahl	Date:	8/8/2024
By Whom:	Morgan Wilson	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	x1 VOA for MW-S3 is labeled "Whidbey"		
Client Instructions:	Part of MW-S3 Volume		

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Alliance Technical Group

PROJECT NAME/NO.: 408153

PO #: E-335

REMARKS: EIM and EQuIS 4 2408139

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Ammonia	Sulfide	RSK MEE	Alkalinity	Anions	TOC					Notes
MW-2S		8/7/2024	1030	water	4	x	x	x	x	x	x					Anions = nitrate,
MW-3S		8/7/2024	1315	water	6	x	x	x	x	x	x					nitrate, chloride,
																sulfate
																Low Volume
																MW-2S

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/9/24	1100
Received by:		Jack Hawthorne	ATG	8/8/24	1532
Relinquished by:					
Received by:					

Data Usability Summary Report

Project Name: HNA Whidbey Marine

Project Description: Soil and Water Samples

Sample Date(s): 10 January through 7 February 2024

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, WA

Validation Performed by: Kathryn Lindenschmidt

Validation Reviewed by: Katherine Miller

Validation Date: 12 March 2024

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDGs) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Groups**
2. **Precision and Accuracy [for SDG(s) above]**
3. **Explanations**
4. **Glossary**
5. **Abbreviations**
6. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- National Functional Guidelines (NFG) for Organic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to t the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Groups

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 401180, dated 8 February 2024;
- 401180, dated 9 February 2024;
- 401269, dated 9 February 2024;
- 402067, dated 16 February 2024;
- 402114, dated 19 February 2024;
- 402092, dated 20 February 2024;
- 402019, dated 21 February 2024;
- 401358, dated 26 February 2024; and
- 402067, dated 27 February 2024.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocols.

- Methods SW9060, E300, SM2320B, RSK175, SM4500-NH3G, SM5310C, SM4500-S2-D, NWTPH-EPH, and NWTPH-VPH were subcontracted to Fremont Analytical – Seattle, WA.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Custody seals were not used when samples were dropped off at the laboratory or service center by the field staff, submitted to a laboratory-provided courier, or when transported between subcontracted laboratories.
- Sample 402092-05 (Trip Blank) was not reported.

Analyses were performed on the samples listed in Table 1. Method holding times are listed in Table 2.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues, such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances. Since these additional quality control issues were not required as per the QAPP, these quality control issues were not reviewed.

1.3 MULTIPLE SAMPLE RESULTS

The laboratory reported multiple results for the samples listed in Table 3. The validator chose the results that best met the DQOs of the project.

1.4 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol, with the following exceptions:

Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
E300, nitrate (as N)	Water	48 Hours	Cool to ≤ 6°C	The following samples were analyzed outside of holding time and were qualified J-: 2402100-001.
SW8260D	Soil	14 days for solid, unpreserved	Cool to ≤ 6°C	The following samples were extracted outside of holding time and were qualified J/UJ: 401358-16, -17, -26.
NWTPH-VPH	Soil	14 days for solid, preserved	Cool to ≤ 6°C	The following samples were analyzed outside of holding time and were qualified J/UJ: 2402008-004, 2401469-001, 2402008-005, and 2401315-001.
NWTPH-EPH	Soil	14 days extraction / 40 days analysis for solid, unpreserved	Cool to ≤ 6°C	The following samples were extracted outside of holding time and were qualified J/UJ: 2402008-001 through -005

1.5 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified. Dilution of the project samples were required to bring calibration of target analytes within calibration range, matrix interference, foaming at the time of purging, or abundance of non-target analytes.

1.6 REPORTING BASIS (WET/DRY)

Refer to Section E 1.1. Soil data in these SDGs were reported on a dry weight basis, with the exception of Method SW9060.

Where reported, percent moisture were reviewed and found to be within limits.

1.7 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory-specified quality control (QC) limits, with the following exceptions:

Method	Sample ID	Lab ID	Surrogate	Dilution	%R	Qualification
SW8270E	MW-19D-S2	401180-02	2,4,6-Tribromophenol	250x	200%	None, dilution > 5x
NWTPH-GX	MW21D-S7	401269-08	-	20x	Ip[1]	None, dilution > 5x
SW8260D	HA-1-DUP	401358-07	Toluene-d8	1x	122%	J+/None target compounds
SW8260D	HA-2-S7	401358-14	Toluene-d8	1x	136%	J+/None target compounds
SW8260D	HA-3-S6	401358-23	Toluene-d8	1x	135%	J+/None target compounds
SW8260D	MW-23D-S6	401358-27	4-Bromoflurobenzene	1x	124%	J+/None target compounds
NWTPH-GX	HA-4-S4	402019-04	-	10X	183%	None, dilution > 5x
SW8270E	MW-23D	402067-04	2,4,6-Tribromophenol	1x	280%	J+/None target compounds
SW8270E	HA-2-S7	401358-14	2,4,6-Tribromophenol	5X	184%	None, dilution > 5x

1. Recovery fell outside of control limits due to sample matrix effects.

1.8 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits, with the following exceptions:

SDG #	Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
401180	LCS	SW8260D	-	Acetone	51%	J/UJ	401180-01 , -02, -03, -04, -06, -08, -09, -10, and -11
401269	LCS	NWTPH-VPH	42713	Aliphatic Hydrocarbon (C8-C10)	203%	J/None	2401469-001
401269	LCS	NWTPH-VPH	42713	Aliphatic Hydrocarbon (C10-C12)	131%	J/None	2401469-001
401269	LCS	NWTPH-VPH	42713	Aromatic Hydrocarbon (C8-C10)	69.7%	J/UJ	2401469-001
401269	LCS	NWTPH-VPH	42713	Aromatic Hydrocarbon (C10-C12)	62.7%	J/UJ	2401469-001

SDG #	Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
401269	LCS	NWTPH-VPH	42713	Aromatic Hydrocarbon (C12-C13)	62.2%	J/UJ	2401469-001

1.9 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike/Matrix Spike Duplicate Sample Client ID	Method(s)
402092-01, 2402100-001	MW-19D-W	SW6020B, SW8260D, SM 5310C
401180-04	MW-19D-S4	SW8260D
401180-01	MW-19D-S1	SW8270E
2401315-001	MW-19D-S2	NWTPH-EPH
401269-01	MW-20D-S6	NWTPH-DX, SW6020B, SW8270E
401269-06	MW-21D-S5	SW8260D
2401469-001	MW-21D-S7	NWTPH-EPH
2401419-001	MW-21D-S2	SW9060
401358-01	HA-1-S1	NWTPH-DX, SW6020B, SW8270E
401358-15	HA-2-S8	NWTPH-DX, SW8260D
401358-27	MW-23D-S6	SW6020B
401358-02	HA-1-S2	SW8260D
401358-24	MW-23D-S3	SW8260D
2402008-005	MW-23D-S6	NWTPH-VPH
402019-01	HA-4-S1	SW8270E
2402047-001	HA-4-S2	SW9060
2402085-002	MW-23D	SM4500-S2-D

The MS/MSD recoveries and the relative percent difference (RPD) between the MS and MSD results were within the specified limits. Exceptions are listed in Table 4.

1.10 BLANK SAMPLE ANALYSIS

Refer to Section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with the following exceptions:

Blank Type	Batch ID	Analyte Detected in Blank	Concentration (mg/Kg)	Qualifier	Affected Samples
Method Blank	42713	Aliphatic Hydrocarbon (C6-C8)	0.989 J	NA	None, samples are >10x blank
	42713	Aromatic Hydrocarbon (C8-C10)	1.30 J	NA	None, samples are >10x blank

1.11 DUPLICATE SAMPLE ANALYSIS

Refer to Section E 1.6. The following sample(s) were used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL). Any exceptions are noted below and qualified.

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
401358-29	HA-1-GW	NWTPH-Gx
2402008-003B	HA-2-S7	NWTPH-VPH
402019-01	HA-4-S1	NWTPH-Gx
2402047-001A	HA-4-S2	SW9060
2402085-001	MW-22D	SM 2320B
2402085-002C	MW-23D	SM 4500-S2-D
402067-01	MW-1S	NWTPH-Gx
2402085-001A	MW-22D	SM 2320B
2402085-002C	MW-23D	SM 4500-S2-D
2401419-001A	MW-21D-S2	SW9060
2402100-001A	MW-19D-W	SM2320B
2402100-001C	MW-19D-W	SM 5310C
402114-01	MW-10D-W	NWTPH-Gx
401180-01	MW-19D-S1	NWTPH-Gx
2401315-001B	MW-19D-S2	NWTPH-VPH
2401469-001B	MW-21D-S7	NWTPH-VPH
2401419-001A	MW-21D-S2	SW9060

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)/Analyte	% RPD	Qualification
2401315-001B	MW-19D-S2	Aliphatic Hydrocarbon (C6-C8)	200%	J/UJ All Samples
2401315-001B	MW-19D-S2	Aromatic Hydrocarbon (C8-C10)	32.7%	J/UJ All Samples

The following sample(s) were used for field duplicate analysis. RPDs were all below 35 percent for water and 50 percent for soil (or the absolute difference rule was satisfied if detects were less than 5 times the RL). Any exceptions are noted below and qualified.

Primary Sample ID	Duplicate Sample ID	Method(s)
HA-3-GW	DUP-01	NWTPH-DX, NWTPH-GX, SW8021B, and SM2540D
MW-21D-W	DUP-01	SW8260D, SW8270E, NWTPH-DX, NWTPH-GX, SW6020B, SM2540D, E300, SM2320B, RSK175, SM4500-NH3G, SM5310C, SM4500-S2-D
HA-1-S6	HA-1-DUP	SW8260D, SW8270E, NWTPH-DX, NWTPH-GX, SW6020B, NWTPH-EPH, NWTPH-VPH, SW9060
MW-23D-DUP	MW-23D-S6	SW8260D, SW8270E, NWTPH-DX, NWTPH-GX, SW6020B, SW9060

Field Duplicate RPD Calculations:

Method	Analyte	Units	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
			MW-21D-W	DUP-01		
SM2540D	Total Suspended Solids (TSS)	mg/L	310	160	63.8%	J/UJ, RPD > 35%
SW6020B	Lead (total)	µg/L	5.1	3.58	NA	J/UJ, Abs Diff > RL
SM4500-S2-D	Sulfide	mg/L	0.207	0.151	NA	J/UJ, Abs Diff > RL

Method	Analyte	Units	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
			MW-23D-S6	MW-23D-DUP		
SW8260D	Toluene	mg/kg	5.2	2.9	56.8%	J/UJ, RPD > 50%
NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO	mg/kg	230	65	NA	J/UJ, Abs Diff > RL

Method	Analyte	Units	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
			HA-1-S6	HA-1-DUP		
SW8260D	1,2,4-Trimethylbenzene	mg/kg	1	190	197.9	J/UJ, RPD > 50%
SW8260D	1,3,5-Trimethylbenzene	mg/kg	0.26	56	198.2	J/UJ, RPD > 50%
SW8260D	Ethylbenzene	mg/kg	0.32	63	198.0	J/UJ, RPD > 50%
NWTPH-GX	Gasoline Range Organics	mg/kg	2000	1000	66.7	J/UJ, RPD > 50%
SW8260D	m,p-Xylenes	mg/kg	1.3	260	198.0	J/UJ, RPD > 50%
SW8260D	Naphthalene	mg/kg	0.53	35	194.0	J/UJ, RPD > 50%
SW8260D	n-Propylbenzene	mg/kg	0.11	28	198.4	J/UJ, RPD > 50%
SW8260D	o-Xylene	mg/kg	0.56	94	197.6	J/UJ, RPD > 50%
SW8260D	Toluene	mg/kg	0.98	100	196.1	J/UJ, RPD > 50%
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C8-C10) Aromatic	mg/kg	101	1460	174.1	J/UJ, RPD > 50%
SW8260D	2-Phenylbutane (sec-Butylbenzene)	mg/kg	0.050 U	4	NA	J/UJ, Abs Diff > RL
SW8260D	Benzene	mg/kg	0.030 U	0.13	NA	J/UJ, Abs Diff > RL
SW8260D	Chloroform (Trichloromethane)	mg/kg	0.050 U	0.56	NA	J/UJ, Abs Diff > RL
SW8260D	Cymene (p-Isopropyltoluene)	mg/kg	0.050 U	1.9	NA	J/UJ, Abs Diff > RL
NWTPH-EPH	Extractable Petroleum Hydrocarbons (C16-C21) Aromatic	mg/kg	11.3 UJ	17.8 J-	NA	J/UJ, Abs Diff > RL
SW8260D	Hexane	mg/kg	0.25 U	8.9	NA	J/UJ, Abs Diff > RL
SW8260D	Isopropylbenzene (Cumene)	mg/kg	0.050 U	8.3	NA	J/UJ, Abs Diff > RL
SW8270E	Phenanthrene	mg/kg	0.037	0.025	NA	J/UJ, Abs Diff > RL
SW8270E	Pyrene	mg/kg	0.011		NA	J/UJ, Abs Diff > RL
SW8260D	Styrene	mg/kg	0.050 U	3.6	NA	J/UJ, Abs Diff > RL
SW8260D	Tetrachloroethene	mg/kg	0.025 U	0.035	NA	J/UJ, Abs Diff > RL
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aliphatic	mg/kg	43.8	469	NA	J/UJ, Abs Diff > RL
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aromatic	mg/kg	57.9	688	NA	J/UJ, Abs Diff > RL
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C12-C13) Aromatic	mg/kg	33.9	215	NA	J/UJ, Abs Diff > RL
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C6-C8) Aliphatic	mg/kg	20	123	NA	J/UJ, Abs Diff > RL
NWTPH-VPH	Volatile Petroleum Hydrocarbons (C8-C10) Aliphatic	mg/kg	17.1 U	278	NA	J/UJ, Abs Diff > RL

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected, except for samples with multiple results reported as summarized in Table 3. A summary of qualifiers applied to this dataset is shown in Table 5.

2. Precision and Accuracy [for SDG(s) above]

Refer to Section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.1 Reporting Basis (Wet/Dry)
  - Soil samples can be reported on either a wet (as received) or dry weight basis. Dry weight data indicate calculations were made to compensate for the moisture content of the soil sample.
  - Percent (%) solids should be appropriately considered when evaluating analytical results for non-aqueous samples. Sediments with high moisture content may or may not be successfully analyzed by routine analytical methods. Samples should have greater than or equal to 30 percent solids to be appropriately quantified.
- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post-digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - FD — Field Duplicate Sample
  - N — Primary Sample
- Units:
  - µg/kg — micrograms per kilogram
  - µg/L — micrograms per liter
  - µg/m^3 — micrograms per cubic meter
  - mg/kg — milligrams per kilogram
  - mg/L — milligrams per liter
  - ppb v/v — parts per billion volume/volume
  - pCi/L — picocuries per liter
  - pg/g — picograms per gram
  - pg/L — picograms per liter
- Matrices:
  - GW/WG — Groundwater
  - QW — Water Quality
  - SO — Soil
  - WQ — Water Quality control matrix
- Table Footnotes:
  - NA — Not applicable
  - ND — Non-detect
  - NR — Not reported
- Common Symbols:
  - % — percent
  - < — less than
  - ≤ — less than or equal to
  - > — greater than
  - ≥ — greater than or equal to
  - = — equal
  - °C — degrees Celsius
  - ± — plus or minus
  - ~ — approximately
  - x — times (multiplier)
- Fractions:
  - N — Normal (method cannot be filtered)
  - D — Dissolved (filtered)
  - T — Total (unfiltered)

5. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
%v/v	Percent volume by volume
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DoD	Department of Defense
DQO	data quality objective
DUSR	Data Usability Summary Report
EIS	Extraction Internal Standard
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
H_2	Hydrogen gas
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MBK	Method Blank Contamination
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	not applicable
ND	Non-Detect
NFG	National Functional Guidelines
NH_3	Ammonia
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorbutanoic Acid
PFD	Perfluorodecalin
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonate
PFPeA	Perfluoropentanoic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	Sampling Analysis Plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid-Phase Extraction
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Concentration (C) Qualifiers:

  U — The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".

  B — The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers:

  E — The compound was quantitated above the calibration range.

  D — The concentration is based on a diluted sample analysis.

- Validation Qualifiers:

  J — The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  J+ — The result is an estimated quantity, but the result may be biased high.

  J- — The result is an estimated quantity, but the result may be biased low.

  J/UJ — as listed in exception tables J applies to detected data and UJ applies to non-detected data as reported by the laboratory.

  UJ — The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

  NJ — The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is an estimated concentration only.

  R — The sample results were rejected as unusable; the compound may or may not be present in the sample.

  S — Result is suspect. See DUSR for details.

References

1. Haley & Aldrich, Inc., 2024. Quality Assurance Project Plan. Whidbey Marine & Auto Supply Site. Freeland, Washington. January 2024.
2. United States Environmental Protection Agency, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.
3. United States Environmental Protection Agency, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Attachments:

Table 1 – Sample Management
Table 2 – Method Holding Times
Table 3 – Reanalysis Summary
Table 4 – Matrix Spike/Matrix Spike Duplicates
Table 5 – System Performance Summary

TABLES

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-19D-S2	N	2401315-001	1/10/2024	SO	B, C
MW-21D-S7	N	2401469-001	1/16/2024	SO	B,C
HA-1-S6	N	2402008-001	1/26/2024	SO	B, C
HA-1-DUP	FD	2402008-002	1/26/2024	SO	B, C
HA-2-S7	N	2402008-003	1/25/2024	SO	B, C
HA-3-S6	N	2402008-004	1/23/2024	SO	B, C
MW-23D-S6	N	2402008-005	1/22/2024	SO	B, C
HA-4-S2	N	2402047-001	1/29/2024	SO	A
HA-4-S4	N	2402086-001	1/29/2024	SO	B, C
HA-4-S4	N	2402047-002	1/29/2024	SO	A
HA-4-S6	N	2402047-003	1/29/2024	SO	A
MW-22D	N	2402085-001	2/5/2024	WG	K, L, M, N, O, P
MW-23D	N	2402085-002	2/5/2024	WG	K, L, M, N, O, P
MW-19D-W	N	2402100-001	2/6/2024	WG	K, L, M, N, O, P
MW-20D-W	N	2402100-002	2/6/2024	WG	K, L, M, N, O, P
MW-21D-W	N	2402100-003	2/6/2024	WG	K, L, M, N, O, P
DUP-01	FD	2402100-004	2/6/2024	WG	K, L, M, N, O, P
MW-19D-S1	N	401180-01	1/10/2024	SO	D, E, F, G, H
MW-19D-S2	N	401180-02	1/10/2024	SO	D, E, F, G, H
MW-19D-S3	N	401180-03	1/10/2024	SO	D, E, F, G, H
MW-19D-S4	N	401180-04	1/10/2024	SO	D, E, F, G, H
MW-19D-S5	N	401180-05	1/10/2024	SO	D, E, F, G, H
MW-19D-S6	N	401180-06	1/10/2024	SO	D, E, F, G, H
HA-2-S1	N	401180-07	1/9/2024	SO	Hold
MW-20D-S1	N	401180-08	1/11/2024	SO	D, E, F, G, H
MW-20D-S2	N	401180-09	1/11/2024	SO	D, E, F, G, H
MW-20D-S3	N	401180-10	1/12/2024	SO	D, E, F, G, H
MW-20D-S4	N	401180-11	1/12/2024	SO	D, E, F, G, H
MW-20D-S5	N	401180-12	1/12/2024	SO	D, E, F, G, H
MW-20D-S6	N	401269-01	1/15/2024	SO	D, E, F, G, H
MW-21D-S1	N	401269-02	1/16/2024	SO	D, E, F, G, H
MW-21D-S2	N	401269-03	1/16/2024	SO	D, E, F, G, H
MW-21D-S3	N	401269-04	1/16/2024	SO	D, E, F, G, H
MW-21D-S4	N	401269-05	1/16/2024	SO	D, E, F, G, H
MW-21D-S5	N	401269-06	1/16/2024	SO	D, E, F, G, H
MW-21D-S6	N	401269-07	1/16/2024	SO	F, G, I
MW-21D-S7	N	401269-08	1/16/2024	SO	D, E, F, G, H
MW-22D-S1	N	401269-09	1/17/2024	SO	D, E, F, G, H
MW-22D-S2	N	401269-10	1/17/2024	SO	D, E, F, G, H
MW-22D-S3	N	401269-11	1/17/2024	SO	Hold
MW-22D-S4	N	401269-12	1/17/2024	SO	D, E, F, G, H
MW-22D-S5	N	401269-13	1/17/2024	SO	D, E, F, G, H
MW-22D-S6	N	401269-14	1/18/2024	SO	Hold

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-22D-S7	N	401269-15	1/19/2024	SO	Hold
MW-22D-S8	N	401269-16	1/19/2024	SO	D, E, F, G, H
MW-23D-S1	N	401269-17	1/19/2024	SO	D, E, F, G, H
MW-23D-S2	N	401269-18	1/19/2024	SO	D, E, F, G, H
MW-22D-GRAB	N	401269-19	1/18/2024	WG	D, F, G, I, J
HA-1-S1	N	401358-01	1/26/2024	SO	D, E, F, G, J
HA-1-S2	N	401358-02	1/26/2024	SO	D, E, F, G, J
HA-1-S3	N	401358-03	1/26/2024	SO	D, E, F, G, J
HA-1-S4	N	401358-04	1/26/2024	SO	D, E, F, G, J
HA-1-S5	N	401358-05	1/26/2024	SO	Hold
HA-1-S6	N	401358-06	1/26/2024	SO	D, E, F, G, J
HA-1-DUP	FD	401358-07	1/26/2024	SO	D, E, F, G, J
HA-2-S1.5	N	401358-08	1/24/2024	SO	D, E, F, G, J
HA-2-S2	N	401358-09	1/24/2024	SO	D, E, F, G, J
HA-2-S3	N	401358-10	1/24/2024	SO	D, E, F, G, J
HA-2-S4	N	401358-11	1/24/2024	SO	D, E, F, G, J
HA-2-S5	N	401358-12	1/24/2024	SO	D, E, F, G, J
HA-2-S6	N	401358-13	1/24/2024	SO	Hold
HA-2-S7	N	401358-14	1/25/2024	SO	D, E, F, G, J
HA-2-S8	N	401358-15	1/25/2024	SO	D, E, F, G, J
HA-2-S9	N	401358-16	1/25/2024	SO	D, G, G, I
HA-2-S10	N	401358-17	1/25/2024	SO	D, G, G, I
HA-3-S1	N	401358-18	1/23/2024	SO	D, E, F, G, J
HA-3-S2	N	401358-19	1/23/2024	SO	D, E, F, G, J
HA-3-S3	N	401358-20	1/23/2024	SO	D, E, F, G, J
HA-3-S4	N	401358-21	1/23/2024	SO	D, E, F, G, J
HA-3-S5	N	401358-22	1/23/2024	SO	Hold
HA-3-S6	N	401358-23	1/23/2024	SO	D, E, F, G, J
MW-23D-S3	N	401358-24	1/22/2024	SO	D, E, F, G, J
MW-23D-S4	N	401358-25	1/22/2024	SO	D, E, F, G, J
MW-23D-S5	N	401358-26	1/22/2024	SO	D,F, G, I
MW-23D-S6	N	401358-27	1/22/2024	SO	D, E, F, G, J
MW-23D-DUP	N	401358-28	1/22/2024	SO	D, E, F, G, J
HA-1-GW	N	401358-29	1/26/2024	WG	D,F, G, I
HA-2-GW	N	401358-30	1/24/2024	WG	D,F, G, I
HA-3-GW	N	401358-31	1/23/2024	WG	F, G, I, J
DUP-01	FD	401358-32	1/23/2024	WG	F, G, I, J
HA-4-S1	N	402019-01	1/29/2024	SO	D, E, F, G, H
HA-4-S2	N	402019-02	1/29/2024	SO	D, E, F, G, H
HA-4-S3	N	402019-03	1/29/2024	SO	D, E, F, G, H
HA-4-S4	N	402019-04	1/29/2024	SO	D, E, F, G, H
HA-4-S5	N	402019-05	1/29/2024	SO	D, F, I
HA-4-S6	N	402019-06	1/29/2024	SO	D, E, F, G, H

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-1S	N	402067-01	2/5/2024	WG	D, F, I
MW-3S	N	402067-02	2/5/2024	WG	D, F, I
MW-22D	N	402067-03	2/5/2024	WG	D, E, F, G, H, J
MW-23D	N	402067-04	2/5/2024	WG	D, E, F, G, H, J
MW-19D-W	N	402092-01	2/6/2024	WG	D, E, F, G, H, J
MW-20D-W	N	402092-02	2/6/2024	WG	D, E, F, G, H, J
MW-21D-W	N	402092-03	2/6/2024	WG	D, E, F, G, H, J
DUP-01	FD	402092-04	2/6/2024	WG	D, E, F, G, H, J
Trip Blank	TB	402092-05	2/6/2024	WG	D
MW-10D-W	N	402114-01	2/7/2024	WG	F,G,I
MW-11D-W	N	402114-02	2/7/2024	WG	F,G,I
MW-21D-S2	N	2401419-001	1/16/2024	SO	A
MW-21D-S4	N	2401419-002	1/16/2024	SO	A
MW-21D-S7	N	2401419-003	1/16/2024	SO	A
MW-23D-S2	N	2401419-004	1/19/2024	SO	A
HA-1-S2	N	2401541-001A	1/26/2024	SO	A
HA-1-S4	N	2401541-002A	1/26/2024	SO	A
HA-1-S6	N	2401541-003A	1/26/2024	SO	A
HA-1-DUP	FD	2401541-004A	1/26/2024	SO	A
HA-2-S3	N	2401541-005A	1/24/2024	SO	A
HA-2-S5	N	2401541-006A	1/24/2024	SO	A
HA-2-S7	N	2401541-007A	1/25/2024	SO	A
MW-23D-S4	N	2401541-008A	1/22/2024	SO	A
MW-23D-S6	N	2401541-009A	1/22/2024	SO	A
MW-23D-DUP	FD	2401541-010A	1/22/2024	SO	A

TABLE 2
METHOD HOLDING TIMES
HNA WHIDBEY MARINE

Analytic Method		Description	Holding Time
A	SW9060	Total Organic Carbon (TOC)	28 days for liquid preserved
B	NWTPH-EPH	EXTRACTABLE PETROLEUM HYDROCARBON FRACTIONS	14 days extraction / 40 days analysis for solid, unpreserved
C	NWTPH-VPH	VOLATILE PETROLEUM HYDROCARBON FRACTIONS	14 days for solid, preserved
D	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid, unpreserved
E	SW8270E	Polycyclic Aromatic Hydrocarbons (PAHs)	7 days extraction / 40 days analysis for liquid, unpreserved, 14 days extraction / 40 days analysis for solid, unpreserved
F	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid unpreserved
G	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid unpreserved
H	SW6020B	Metals	180 days for liquid, preserved , 180 days for solid unpreserved
I	SW8021B	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved ,14 days for solid unpreserved
J	SM2540D	Total Suspended Solids	28 days for liquid unpreserved
K	E300	Sulfate, Chloride	28 days for liquid unpreserved
	E300	Nitrate, Nitrite	48 hours for liquid unpreserved
L	SM2320B	Alkalinity	14 days for liquid unpreserved
M	RSK175	Dissolved Gases	14 days for liquid, preserved 7 days for liquid unpreserved
N	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid, preserved
O	SM5310C	Total Organic Carbon	28 days for liquid, preserved
P	SM4500-S2-D	TOTAL SULFIDES	7 days for liquid, preserved

TABLE 3
REANALYSIS SUMMARY
HNA WHIDBEY MARINE

Lab ID	Rejected Analysis Date	Method	Analyte
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aliphatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aromatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C12-C13) Aromatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C8-C10) Aromatic
2402100-001	2/7/24 20:43	E300	Nitrate
401180-02	1/15/24 15:43	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
401180-02	1/15/24 15:43	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
401180-02	1/16/24 22:32	SW8270E	Benzo(a)pyrene
401180-02	1/16/24 22:32	SW8270E	Benzo(b)fluoranthene
401180-02	1/16/24 22:32	SW8270E	Benzo(g,h,i)perylene
401180-02	1/16/24 22:32	SW8270E	Benzo(k)fluoranthene
401180-02	1/16/24 22:32	SW8270E	Dibenz(a,h)anthracene
401180-02	1/16/24 22:32	SW8270E	Indeno(1,2,3-cd)pyrene
401269-08	1/23/24 15:48	SW8260D	1,2,4-Trimethylbenzene
401269-08	1/23/24 15:48	SW8260D	1,3,5-Trimethylbenzene
401269-08	1/24/24 19:44	SW8270E	2-Methylnaphthalene
401269-08	1/24/24 19:44	SW8270E	Naphthalene
401358-07	1/31/24 13:15	SW8260D	1,2,4-Trimethylbenzene
401358-07	1/31/24 13:15	SW8260D	1,3,5-Trimethylbenzene
401358-07	1/31/24 13:15	SW8260D	Ethylbenzene
401358-07	1/31/24 13:15	SW8260D	m,p-Xylenes
401358-07	1/31/24 13:15	SW8260D	Naphthalene
401358-07	1/31/24 13:15	SW8260D	n-Propylbenzene
401358-07	1/31/24 13:15	SW8260D	o-Xylene
401358-07	1/31/24 13:15	SW8260D	Toluene
401358-14	1/31/24 14:29	SW8260D	1,2,4-Trimethylbenzene
401358-14	1/31/24 14:29	SW8260D	1,3,5-Trimethylbenzene
401358-14	1/31/24 14:29	SW8260D	Ethylbenzene
401358-14	1/31/24 14:29	SW8260D	Isopropylbenzene (Cumene)
401358-14	1/31/24 14:29	SW8260D	m,p-Xylenes
401358-14	1/31/24 14:29	SW8260D	Naphthalene
401358-14	1/31/24 14:29	SW8260D	n-Propylbenzene
401358-14	1/31/24 14:29	SW8260D	o-Xylene
401358-14	1/31/24 14:29	SW8260D	Toluene
401358-14	1/30/24 18:10	SW8270E	1-Methylnaphthalene
401358-14	1/30/24 18:10	SW8270E	2-Methylnaphthalene
401358-14	1/30/24 18:10	SW8270E	Naphthalene
401358-23	1/31/24 14:53	SW8260D	1,2,4-Trimethylbenzene
401358-23	1/31/24 14:53	SW8260D	1,3,5-Trimethylbenzene
401358-23	1/31/24 14:53	SW8260D	Ethylbenzene
401358-23	1/31/24 14:53	SW8260D	Hexane
401358-23	1/31/24 14:53	SW8260D	Isopropylbenzene (Cumene)
401358-23	1/31/24 14:53	SW8260D	m,p-Xylenes

Lab ID	Rejected Analysis Date	Method	Analyte
401358-23	1/31/24 14:53	SW8260D	Naphthalene
401358-23	1/31/24 14:53	SW8260D	n-Propylbenzene
401358-23	1/31/24 14:53	SW8260D	o-Xylene
401358-23	1/31/24 14:53	SW8260D	Toluene
401358-23	1/30/24 20:54	SW8270E	2-Methylnaphthalene
402067-04	2/8/24 19:52	SW8270E	Naphthalene
402067-04	2/7/24 0:00	SW8260D	1,1,1,2-Tetrachloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,1-Trichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,2,2-Tetrachloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,2-Trichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloropropene
402067-04	2/19/24 19:30	SW8260D	1,2,3-Trichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2,3-Trichloropropane
402067-04	2/7/24 0:00	SW8260D	1,2,4-Trichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2,4-Trimethylbenzene
402067-04	2/7/24 0:00	SW8260D	1,2-Dibromo-3-chloropropane (DBCP)
402067-04	2/7/24 0:00	SW8260D	1,2-Dibromoethane (Ethylene Dibromide)
402067-04	2/7/24 0:00	SW8260D	1,2-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2-Dichloroethane
402067-04	2/7/24 0:00	SW8260D	1,2-Dichloropropane
402067-04	2/7/24 0:00	SW8260D	1,3,5-Trimethylbenzene
402067-04	2/7/24 0:00	SW8260D	1,3-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,3-Dichloropropane
402067-04	2/7/24 0:00	SW8260D	1,4-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	2,2-Dichloropropane
402067-04	2/19/24 19:30	SW8260D	2-Butanone (Methyl Ethyl Ketone)
402067-04	2/7/24 0:00	SW8260D	2-Chlorotoluene
402067-04	2/7/24 0:00	SW8260D	2-Hexanone (Methyl Butyl Ketone)
402067-04	2/8/24 19:52	SW8270E	2-Methylnaphthalene
402067-04	2/7/24 0:00	SW8260D	2-Phenylbutane (sec-Butylbenzene)
402067-04	2/7/24 0:00	SW8260D	4-Chlorotoluene
402067-04	2/7/24 0:00	SW8260D	4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)
402067-04	2/7/24 0:00	SW8260D	Acetone
402067-04	2/7/24 0:00	SW8260D	Benzene
402067-04	2/7/24 0:00	SW8260D	Bromobenzene
402067-04	2/7/24 0:00	SW8260D	Bromodichloromethane
402067-04	2/7/24 0:00	SW8260D	Bromoform
402067-04	2/7/24 0:00	SW8260D	Bromomethane (Methyl Bromide)
402067-04	2/7/24 0:00	SW8260D	Carbon tetrachloride
402067-04	2/7/24 0:00	SW8260D	Chlorobenzene
402067-04	2/7/24 0:00	SW8260D	Chloroethane

TABLE 3
REANALYSIS SUMMARY
HNA WHIDBEY MARINE

Lab ID	Rejected Analysis Date	Method	Analyte
402067-04	2/7/24 0:00	SW8260D	Chloroform (Trichloromethane)
402067-04	2/7/24 0:00	SW8260D	Chloromethane (Methyl Chloride)
402067-04	2/7/24 0:00	SW8260D	cis-1,2-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	cis-1,3-Dichloropropene
402067-04	2/7/24 0:00	SW8260D	Cymene (p-Isopropyltoluene)
402067-04	2/7/24 0:00	SW8260D	Dibromochloromethane
402067-04	2/7/24 0:00	SW8260D	Dibromomethane
402067-04	2/7/24 0:00	SW8260D	Dichlorodifluoromethane (CFC-12)
402067-04	2/7/24 0:00	SW8260D	Ethylbenzene
402067-04	2/7/24 0:00	SW8260D	Hexachlorobutadiene
402067-04	2/7/24 0:00	SW8260D	Hexane
402067-04	2/7/24 0:00	SW8260D	Isopropylbenzene (Cumene)
402067-04	2/7/24 0:00	SW8260D	m,p-Xylenes
402067-04	2/7/24 0:00	SW8260D	Methyl Tert Butyl Ether (MTBE)
402067-04	2/19/24 19:30	SW8260D	Methylene chloride (Dichloromethane)
402067-04	2/7/24 0:00	SW8260D	Naphthalene
402067-04	2/7/24 0:00	SW8260D	n-Propylbenzene
402067-04	2/7/24 0:00	SW8260D	o-Xylene
402067-04	2/7/24 0:00	SW8260D	Styrene
402067-04	2/7/24 0:00	SW8260D	tert-Butylbenzene
402067-04	2/19/24 19:30	SW8260D	Tetrachloroethene
402067-04	2/19/24 19:30	SW8260D	Toluene
402067-04	2/7/24 0:00	SW8260D	trans-1,2-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	trans-1,3-Dichloropropene
402067-04	2/19/24 19:30	SW8260D	Trichloroethene
402067-04	2/7/24 0:00	SW8260D	Trichlorofluoromethane (CFC-11)
402067-04	2/7/24 0:00	SW8260D	Vinyl chloride
402092-01	2/8/24 19:14	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-01	2/8/24 19:14	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-02	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-02	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-03	2/9/24 10:37	SW8270E	Naphthalene
402092-03	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-03	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-04	2/9/24 12:16	SW8270E	Naphthalene
402092-04	2/8/24 0:00	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-04	2/8/24 0:00	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402114-01	2/9/24 11:38	NWTPH-DX	Diesel Range Hydrocarbons (DRH)
402114-01	2/9/24 11:38	NWTPH-DX	Residual Range Hydrocarbons
402114-02	2/9/24 11:38	NWTPH-DX	Diesel Range Hydrocarbons (DRH)
402114-02	2/9/24 11:38	NWTPH-DX	Residual Range Hydrocarbons

TABLE 4
MATRIX SPIKE/MATRIX SPIKE DUPLICATES
HNA WHIDBEY MARINE

Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
MS	NWTPH-EPH	2401469-001	Aromatic Hydrocarbon (C10-C12)	132% /135%	NA	None, confirmation matrix spike within limits
MS/MSD	SW8260D	401358-24	Benzene	132%/130%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Toluene	135%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,3-Dichloropropane	142%/148%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Tetrachloroethene	1.35	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2-Dibromoethane (EDB)	1.43	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Chlorobenzene	135%/140%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Ethylbenzene	139%/142%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	m,p-Xylene	138%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	o-Xylene	135%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Styrene	140%/143%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Bromobenzene	146%/143%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,1,2,2-Tetrachloroethane	149%/146%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2,3-Trichloropropane	157%/153%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	2-Chlorotoluene	143%/140%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	4-Chlorotoluene	145%/142%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	tert-Butylbenzene	141%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	sec-Butylbenzene	1.48	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,3-Dichlorobenzene	134%/134%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,4-Dichlorobenzene	141%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2-Dichlorobenzene	139%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Hexachlorobutadiene	151%/147%	J/None	None, sample ND
MS	NWTPH-VPH	2402008-005	Aliphatic Hydrocarbon (C10-C12)	63%	NA	None, native sample > 4x the spike added
MS	NWTPH-VPH	2402008-005	Aromatic Hydrocarbon (C10-C12)	15.60%	NA	None, native sample > 4x the spike added
MS	NWTPH-VPH	2402008-005	Aromatic Hydrocarbon (C12-C13)	68.80%	NA	None, native sample > 4x the spike added

TABLE 5
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C10-C12) Aliphatic	2.13 Q+	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C10-C12) Aromatic	1.29 Q-	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C12-C13) Aromatic	1.22 Q-	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C8-C10) Aromatic	0.831 Q -J	R	VCM
402092	E300	MW-19D-W-20240206	2402100-001	Nitrate (as N)	34.7 E	R	EXE
401180	SW8270E	MW-19D-S2	401180-02	Benzo(a)pyrene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(b)fluoranthene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(g,h,i)perylene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(k)fluoranthene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Dibenz(a,h)anthracene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Indeno(1,2,3-cd)pyrene	ND UJ	R	VCM
401180	NWTPH-DX	MW-19D-S2	401180-02	Total Petroleum Hydrocarbons (C10-C25) DRO	370	R	VCM
401180	NWTPH-DX	MW-19D-S2	401180-02	Total Petroleum Hydrocarbons (C25-C36) ORO	1700	R	VCM
401269	SW8260D	MW-21D-S7	401269-08	1,2,4-Trimethylbenzene	19 E	R	EXE
401269	SW8260D	MW-21D-S7	401269-08	1,3,5-Trimethylbenzene	8.5 E	R	EXE
401269	SW8270E	MW-21D-S7	401269-08	2-Methylnaphthalene	16 E	R	EXE
401269	SW8270E	MW-21D-S7	401269-08	Naphthalene	6.5 E	R	EXE
401269	SW8260D	MW-22D-S1	401269-09	1,2-Dibromo-3-chloropropane (DBCP)	0.5 EJ	R	EXE
401269	SW8260D	MW-22D-S1	401269-09	Acetone	5 EJ	R	EXE
401269	SW8260D	MW-23D-S1	401269-17	1,2-Dibromo-3-chloropropane (DBCP)	0.5 EJ	R	EXE
401269	SW8260D	MW-23D-S1	401269-17	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S1	401358-01	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S2	401358-02	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S3	401358-03	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S4	401358-04	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	1,2,4-Trimethylbenzene	120 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	1,3,5-Trimethylbenzene	66 E	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401358	SW8260D	HA-1-DUP	401358-07	Ethylbenzene	69 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	m,p-Xylenes	240 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	Naphthalene	43 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	n-Propylbenzene	34 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	o-Xylene	120 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	Toluene	120 E	R	EXE
401358	SW8260D	HA-2-S1.5	401358-08	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S2	401358-09	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S3	401358-10	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S4	401358-11	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S5	401358-12	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S7	401358-14	1,2,4-Trimethylbenzene	180E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	1,3,5-Trimethylbenzene	110E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	1-Methylnaphthalene	13E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	2-Methylnaphthalene	27E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Ethylbenzene	120E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Hexane	49E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Isopropylbenzene (Cumene)	18E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	m,p-Xylenes	400E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Naphthalene	75E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	Naphthalene	24E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	n-Propylbenzene	73E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	o-Xylene	250E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Toluene	250E	R	EXE
401358	SW8260D	HA-2-S8	401358-15	Trichlorofluoromethane (CFC-11)	0.5 EJ	R	EXE
401358	SW8260D	HA-3-S1	401358-18	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S2	401358-19	Acetone	5 EJ	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401358	SW8260D	HA-3-S3	401358-20	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S4	401358-21	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S6	401358-23	1,2,4-Trimethylbenzene	200E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	1,3,5-Trimethylbenzene	120E	R	EXE
401358	SW8270E	HA-3-S6	401358-23	2-Methylnaphthalene	11E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Ethylbenzene	150E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Hexane	260E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Isopropylbenzene (Cumene)	25E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	m,p-Xylenes	430E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Naphthalene	76E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	n-Propylbenzene	93E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	o-Xylene	240E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Toluene	130 E	R	EXE
401358	SW8260D	MW-23D-S3	401358-24	Acetone	5 EJ	R	EXE
401358	SW8260D	MW-23D-S4	401358-25	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S1	402019-01	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S2	402019-02	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S3	402019-03	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S4	402019-04	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S6	402019-06	Acetone	5 EJ	R	EXE
402067	SW8260D	MW-22D-20240205	402067-03	Acetone	50 EJ	R	EXE
402067	SW8260D	MW-22D-20240205	402067-03	Trichlorofluoromethane (CFC-11)	1 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	1,1,1,2-Tetrachloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,1-Trichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,2,2-Tetrachloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,2-Trichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloroethane	ND	R	VCM

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,3-Trichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,4-Trichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,4-Trimethylbenzene	580	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dibromo-3-chloropropane (DBCP)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dibromoethane (Ethylene Dibromide)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3,5-Trimethylbenzene	220	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,4-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2,2-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Chlorotoluene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Hexanone (Methyl Butyl Ketone)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Phenylbutane (sec-Butylbenzene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	4-Chlorotoluene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Benzene	11 T	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromodichloromethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromoform	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromomethane (Methyl Bromide)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Carbon tetrachloride	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Chlorobenzene	ND	R	VCM

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8260D	MW-23D-20240205	402067-04	Chloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Chloroform (Trichloromethane)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	cis-1,2-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	cis-1,3-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Cymene (p-Isopropyltoluene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dibromochloromethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dibromomethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dichlorodifluoromethane (CFC-12)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Ethylbenzene	1300	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Hexachlorobutadiene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Hexane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Isopropylbenzene (Cumene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	m,p-Xylenes	4400	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Methyl Tert Butyl Ether (MTBE)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Methylene chloride (Dichloromethane)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Naphthalene	380	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	n-Propylbenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	o-Xylene	1000	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Styrene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	tert-Butylbenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Tetrachloroethene	ND UJ	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	trans-1,2-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	trans-1,3-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Trichloroethene	ND UJ	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Vinyl chloride	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,3-Trichlorobenzene	50 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	2-Butanone (Methyl Ethyl Ketone)	1000 EJ	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8270E	MW-23D-20240205	402067-04	2-Methylnaphthalene	72 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Acetone	10000 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Acetone	2500 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Chloromethane (Methyl Chloride)	500 EJ	R	EXE
402067	SW8270E	MW-23D-20240205	402067-04	Naphthalene	160 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Toluene	14000 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Trichlorofluoromethane (CFC-11)	200 EJ	R	EXE
402092	NWTPH-DX	MW-19D-W-20240206	402092-01	Total Petroleum Hydrocarbons (C10-C25) DRO	ND	R	VCM
402092	NWTPH-DX	MW-19D-W-20240206	402092-01	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-19D-W-20240206	402092-01	2-Butanone (Methyl Ethyl Ketone)	20 EJ	R	EXE
402092	SW8260D	MW-19D-W-20240206	402092-01	Acetone	50 EJ	R	EXE
402092	NWTPH-DX	MW-20D-W-20240206	402092-02	Total Petroleum Hydrocarbons (C10-C25) DRO	110	R	VCM
402092	NWTPH-DX	MW-20D-W-20240206	402092-02	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-20D-W-20240206	402092-02	2-Butanone (Methyl Ethyl Ketone)	20 EJ	R	EXE
402092	SW8260D	MW-20D-W-20240206	402092-02	Acetone	50 EJ	R	EXE
402092	NWTPH-DX	MW-21D-W-20240206	402092-03	Total Petroleum Hydrocarbons (C10-C25) DRO	1600	R	VCM
402092	NWTPH-DX	MW-21D-W-20240206	402092-03	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-21D-W-20240206	402092-03	2-Butanone (Methyl Ethyl Ketone)	200 EJ	R	EXE
402092	SW8260D	MW-21D-W-20240206	402092-03	Acetone	500 EJ	R	EXE
402092	SW8270E	MW-21D-W-20240206	402092-03	Naphthalene	37 E	R	EXE
402092	NWTPH-DX	DUP-01-20240206	402092-04	Total Petroleum Hydrocarbons (C10-C25) DRO	1600	R	VCM
402092	NWTPH-DX	DUP-01-20240206	402092-04	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	DUP-01-20240206	402092-04	2-Butanone (Methyl Ethyl Ketone)	200 EJ	R	EXE
402092	SW8260D	DUP-01-20240206	402092-04	Acetone	500 EJ	R	EXE
402092	SW8270E	DUP-01-20240206	402092-04	Naphthalene	39 E	R	EXE
402114	NWTPH-DX	MW-10D-W-20240207	402114-01	Diesel Range Hydrocarbons (DRH)	ND	R	VCM
402114	NWTPH-DX	MW-10D-W-20240207	402114-01	Residual Range Hydrocarbons	ND	R	VCM

TABLE 5
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402114	NWTPH-DX	MW-11D-W-20240207	402114-02	Diesel Range Hydrocarbons (DRH)	71	R	VCM
402114	NWTPH-DX	MW-11D-W-20240207	402114-02	Residual Range Hydrocarbons	ND	R	VCM

Notes:

VCM *Validator's choice of method.*

FDP *Field duplicate relative percent difference exceeds limits or exceeds the absolute difference rule (used when results are less than 5x the RL).*

EXE *Result exceeds the calibration range.*

DUP *Laboratory duplicate relative percent difference exceeds limits.*

SUR *Surrogate percent recovery outside acceptance limits.*

HTQ *Holding Time exceeded.*

LCS *Laboratory Control/Laboratory Control Spike Duplicate percent recoveries or relative percent difference were outside acceptance limits.*

Data Usability Summary Report

Project Name: HNA Whidbey Marine

Project Description: Soil and Water Samples

Sample Date(s): 10 January through 7 February 2024

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, WA

Validation Performed by: Kathryn Lindenschmidt

Validation Reviewed by: Katherine Miller

Validation Date: 8 March 2024

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDGs) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Group Numbers 309479 and 309532**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Organic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and RL are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Group Numbers 309479 and 309532

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of trichloroethene in the SDG number(s):

- 309479, dated 21 November 2023; and
- 309532, dated 21 November 2023.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocols. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Analyses were performed on the following samples:

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods	Holding Time
MW-17D-GW	N	309479-01	9/27/2023	WG	SW8260D	7 days unpreserved; 14 days preserved
MW-8S-GW	N	309479-02	9/27/2023	WG		
MW-13D-GW	N	309479-03	9/27/2023	WG		
MW-15D-GW	N	309479-04	9/27/2023	WG		
MW-16D-GW	N	309479-05	9/27/2023	WG		
MW-4S	N	309532-01	9/28/2023	WG		
MW-2S	N	309532-02	9/28/2023	WG		
MW-6S	N	309532-03	9/28/2023	WG		
MW-9D	N	309532-04	9/28/2023	WG		
MW-12D	N	309532-05	9/28/2023	WG		
FD-01	FD	309532-06	9/28/2023	WG		

1.2 MULTIPLE SAMPLE RESULTS

The laboratory reported multiple results for the samples listed below. The validator chose the results that best met the DQOs of the project.

Lab ID	Analysis Date	Method	Analyte	Qualification
MW-4S	10/2/2023	SW8260D	Trichloroethene	The 8260D trichloroethene was reanalyzed to achieve a <4 µg/L reporting limits.
MW-9D	10/2/2023	SW8260D	Trichloroethene	
MW-12D	10/2/2023	SW8260D	Trichloroethene	
FD-01	10/2/2023	SW8260D	Trichloroethene	

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified. Dilution of the project samples were required to bring calibration of target analytes within calibration range, matrix interference, foaming at the time of purging, or abundance of non-target analytes.

1.5 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory-specified quality control (QC) limits.

1.6 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits.

1.7 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. No client samples were used for matrix spike/matrix spike duplicate (MS/MSD) analysis in this SDG.

1.8 BLANK SAMPLE ANALYSIS

Refer to Section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

1.9 DUPLICATE SAMPLE ANALYSIS

Refer to Section E 1.6. The laboratory did not analyze any laboratory duplicates as per the method or laboratory SOP.

The following sample(s) were used for field duplicate analysis. The RPD comparison for detections in either the parent or duplicate sample(s) is shown below. RPDs were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the RL). Any exceptions are noted below and qualified.

Primary Sample ID	Duplicate Sample ID	Method(s)
MW-9D	FD-01	SW8260D

1.10 PRECISION AND ACCURACY

Refer to Section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. No qualifiers were applied to any data in this report.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - µg/kg micrograms per kilogram
  - µg/L micrograms per liter
  - µg/m^3 micrograms per cubic meter
  - mg/kg milligrams per kilogram
  - mg/L milligrams per liter
  - ppb v/v parts per billion volume/volume
  - pCi/L picocuries per liter
  - pg/g picograms per gram
  - pg/L picograms per liter
- Matrices:
  - GW/WG Groundwater
  - QW Water Quality
  - WQ Water Quality control matrix
  - WS Surface Water
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - N Normal (method cannot be filtered)
  - D Dissolved (filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
%v/v	Percent volume by volume
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DoD	Department of Defense
DQO	data quality objective
DUSR	Data Usability Summary Report
EIS	Extraction Internal Standard
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
H_2	Hydrogen gas
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MBK	Method Blank Contamination
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	not applicable
ND	Non-Detect
NFG	National Functional Guidelines
NH_3	Ammonia
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorbutanoic Acid
PFD	Perfluorodecalin
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonate
PFPeA	Perfluoropentanoic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	Sampling Analysis Plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid-Phase Extraction
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Concentration (C) Qualifiers:

  U The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".

  B The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers:

  E The compound was quantitated above the calibration range.

  D The concentration is based on a diluted sample analysis.

- Validation Qualifiers:

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  J+ The result is an estimated quantity, but the result may be biased high.

  J- The result is an estimated quantity, but the result may be biased low.

  J/UJ as listed in exception tables J applies to detected data and UJ applies to non-detected data as reported by the laboratory.

  UJ The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

  NJ The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is an estimated concentration only.

  R The sample results were rejected as unusable; the compound may or may not be present in the sample.

  S Result is suspect. See DUSR for details.

References

1. Haley & Aldrich, Inc., 2024. Quality Assurance Project Plan. Whidbey Marine & Auto Supply Site. Freeland, Washington. January 2024.
2. United States Environmental Protection Agency, 2020. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-19D-S2	N	2401315-001	1/10/2024	SO	B, C
MW-21D-S7	N	2401469-001	1/16/2024	SO	B,C
HA-1-S6	N	2402008-001	1/26/2024	SO	B, C
HA-1-DUP	FD	2402008-002	1/26/2024	SO	B, C
HA-2-S7	N	2402008-003	1/25/2024	SO	B, C
HA-3-S6	N	2402008-004	1/23/2024	SO	B, C
MW-23D-S6	N	2402008-005	1/22/2024	SO	B, C
HA-4-S2	N	2402047-001	1/29/2024	SO	A
HA-4-S4	N	2402086-001	1/29/2024	SO	B, C
HA-4-S4	N	2402047-002	1/29/2024	SO	A
HA-4-S6	N	2402047-003	1/29/2024	SO	A
MW-22D	N	2402085-001	2/5/2024	WG	K, L, M, N, O, P
MW-23D	N	2402085-002	2/5/2024	WG	K, L, M, N, O, P
MW-19D-W	N	2402100-001	2/6/2024	WG	K, L, M, N, O, P
MW-20D-W	N	2402100-002	2/6/2024	WG	K, L, M, N, O, P
MW-21D-W	N	2402100-003	2/6/2024	WG	K, L, M, N, O, P
DUP-01	FD	2402100-004	2/6/2024	WG	K, L, M, N, O, P
MW-19D-S1	N	401180-01	1/10/2024	SO	D, E, F, G, H
MW-19D-S2	N	401180-02	1/10/2024	SO	D, E, F, G, H
MW-19D-S3	N	401180-03	1/10/2024	SO	D, E, F, G, H
MW-19D-S4	N	401180-04	1/10/2024	SO	D, E, F, G, H
MW-19D-S5	N	401180-05	1/10/2024	SO	D, E, F, G, H
MW-19D-S6	N	401180-06	1/10/2024	SO	D, E, F, G, H
HA-2-S1	N	401180-07	1/9/2024	SO	Hold
MW-20D-S1	N	401180-08	1/11/2024	SO	D, E, F, G, H
MW-20D-S2	N	401180-09	1/11/2024	SO	D, E, F, G, H
MW-20D-S3	N	401180-10	1/12/2024	SO	D, E, F, G, H
MW-20D-S4	N	401180-11	1/12/2024	SO	D, E, F, G, H
MW-20D-S5	N	401180-12	1/12/2024	SO	D, E, F, G, H
MW-20D-S6	N	401269-01	1/15/2024	SO	D, E, F, G, H
MW-21D-S1	N	401269-02	1/16/2024	SO	D, E, F, G, H
MW-21D-S2	N	401269-03	1/16/2024	SO	D, E, F, G, H
MW-21D-S3	N	401269-04	1/16/2024	SO	D, E, F, G, H
MW-21D-S4	N	401269-05	1/16/2024	SO	D, E, F, G, H
MW-21D-S5	N	401269-06	1/16/2024	SO	D, E, F, G, H
MW-21D-S6	N	401269-07	1/16/2024	SO	F, G, I
MW-21D-S7	N	401269-08	1/16/2024	SO	D, E, F, G, H
MW-22D-S1	N	401269-09	1/17/2024	SO	D, E, F, G, H
MW-22D-S2	N	401269-10	1/17/2024	SO	D, E, F, G, H
MW-22D-S3	N	401269-11	1/17/2024	SO	Hold
MW-22D-S4	N	401269-12	1/17/2024	SO	D, E, F, G, H
MW-22D-S5	N	401269-13	1/17/2024	SO	D, E, F, G, H
MW-22D-S6	N	401269-14	1/18/2024	SO	Hold

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-22D-S7	N	401269-15	1/19/2024	SO	Hold
MW-22D-S8	N	401269-16	1/19/2024	SO	D, E, F, G, H
MW-23D-S1	N	401269-17	1/19/2024	SO	D, E, F, G, H
MW-23D-S2	N	401269-18	1/19/2024	SO	D, E, F, G, H
MW-22D-GRAB	N	401269-19	1/18/2024	WG	D, F, G, I, J
HA-1-S1	N	401358-01	1/26/2024	SO	D, E, F, G, J
HA-1-S2	N	401358-02	1/26/2024	SO	D, E, F, G, J
HA-1-S3	N	401358-03	1/26/2024	SO	D, E, F, G, J
HA-1-S4	N	401358-04	1/26/2024	SO	D, E, F, G, J
HA-1-S5	N	401358-05	1/26/2024	SO	Hold
HA-1-S6	N	401358-06	1/26/2024	SO	D, E, F, G, J
HA-1-DUP	FD	401358-07	1/26/2024	SO	D, E, F, G, J
HA-2-S1.5	N	401358-08	1/24/2024	SO	D, E, F, G, J
HA-2-S2	N	401358-09	1/24/2024	SO	D, E, F, G, J
HA-2-S3	N	401358-10	1/24/2024	SO	D, E, F, G, J
HA-2-S4	N	401358-11	1/24/2024	SO	D, E, F, G, J
HA-2-S5	N	401358-12	1/24/2024	SO	D, E, F, G, J
HA-2-S6	N	401358-13	1/24/2024	SO	Hold
HA-2-S7	N	401358-14	1/25/2024	SO	D, E, F, G, J
HA-2-S8	N	401358-15	1/25/2024	SO	D, E, F, G, J
HA-2-S9	N	401358-16	1/25/2024	SO	D, G, G, I
HA-2-S10	N	401358-17	1/25/2024	SO	D, G, G, I
HA-3-S1	N	401358-18	1/23/2024	SO	D, E, F, G, J
HA-3-S2	N	401358-19	1/23/2024	SO	D, E, F, G, J
HA-3-S3	N	401358-20	1/23/2024	SO	D, E, F, G, J
HA-3-S4	N	401358-21	1/23/2024	SO	D, E, F, G, J
HA-3-S5	N	401358-22	1/23/2024	SO	Hold
HA-3-S6	N	401358-23	1/23/2024	SO	D, E, F, G, J
MW-23D-S3	N	401358-24	1/22/2024	SO	D, E, F, G, J
MW-23D-S4	N	401358-25	1/22/2024	SO	D, E, F, G, J
MW-23D-S5	N	401358-26	1/22/2024	SO	D,F, G, I
MW-23D-S6	N	401358-27	1/22/2024	SO	D, E, F, G, J
MW-23D-DUP	N	401358-28	1/22/2024	SO	D, E, F, G, J
HA-1-GW	N	401358-29	1/26/2024	WG	D,F, G, I
HA-2-GW	N	401358-30	1/24/2024	WG	D,F, G, I
HA-3-GW	N	401358-31	1/23/2024	WG	F, G, I, J
DUP-01	FD	401358-32	1/23/2024	WG	F, G, I, J
HA-4-S1	N	402019-01	1/29/2024	SO	D, E, F, G, H
HA-4-S2	N	402019-02	1/29/2024	SO	D, E, F, G, H
HA-4-S3	N	402019-03	1/29/2024	SO	D, E, F, G, H
HA-4-S4	N	402019-04	1/29/2024	SO	D, E, F, G, H
HA-4-S5	N	402019-05	1/29/2024	SO	D, F, I
HA-4-S6	N	402019-06	1/29/2024	SO	D, E, F, G, H

Client Sample ID	Sample Type	Lab Sample ID	Sample Date	Matrix	Methods
MW-1S	N	402067-01	2/5/2024	WG	D, F, I
MW-3S	N	402067-02	2/5/2024	WG	D, F, I
MW-22D	N	402067-03	2/5/2024	WG	D, E, F, G, H, J
MW-23D	N	402067-04	2/5/2024	WG	D, E, F, G, H, J
MW-19D-W	N	402092-01	2/6/2024	WG	D, E, F, G, H, J
MW-20D-W	N	402092-02	2/6/2024	WG	D, E, F, G, H, J
MW-21D-W	N	402092-03	2/6/2024	WG	D, E, F, G, H, J
DUP-01	FD	402092-04	2/6/2024	WG	D, E, F, G, H, J
Trip Blank	TB	402092-05	2/6/2024	WG	D
MW-10D-W	N	402114-01	2/7/2024	WG	F,G,I
MW-11D-W	N	402114-02	2/7/2024	WG	F,G,I
MW-21D-S2	N	2401419-001	1/16/2024	SO	A
MW-21D-S4	N	2401419-002	1/16/2024	SO	A
MW-21D-S7	N	2401419-003	1/16/2024	SO	A
MW-23D-S2	N	2401419-004	1/19/2024	SO	A
HA-1-S2	N	2401541-001A	1/26/2024	SO	A
HA-1-S4	N	2401541-002A	1/26/2024	SO	A
HA-1-S6	N	2401541-003A	1/26/2024	SO	A
HA-1-DUP	FD	2401541-004A	1/26/2024	SO	A
HA-2-S3	N	2401541-005A	1/24/2024	SO	A
HA-2-S5	N	2401541-006A	1/24/2024	SO	A
HA-2-S7	N	2401541-007A	1/25/2024	SO	A
MW-23D-S4	N	2401541-008A	1/22/2024	SO	A
MW-23D-S6	N	2401541-009A	1/22/2024	SO	A
MW-23D-DUP	FD	2401541-010A	1/22/2024	SO	A

TABLE 2
METHOD HOLDING TIMES
HNA WHIDBEY MARINE

Analytic Method		Description	Holding Time
A	SW9060	Total Organic Carbon (TOC)	28 days for liquid preserved
B	NWTPH-EPH	EXTRACTABLE PETROLEUM HYDROCARBON FRACTIONS	14 days extraction / 40 days analysis for solid, unpreserved
C	NWTPH-VPH	VOLATILE PETROLEUM HYDROCARBON FRACTIONS	14 days for solid, preserved
D	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid, unpreserved
E	SW8270E	Polycyclic Aromatic Hydrocarbons (PAHs)	7 days extraction / 40 days analysis for liquid, unpreserved, 14 days extraction / 40 days analysis for solid, unpreserved
F	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid unpreserved
G	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid, preserved 7 days for liquid unpreserved, 14 days for solid unpreserved
H	SW6020B	Metals	180 days for liquid, preserved , 180 days for solid unpreserved
I	SW8021B	Volatile Organic Compounds (VOCs)	14 days for liquid, preserved ,14 days for solid unpreserved
J	SM2540D	Total Suspended Solids	28 days for liquid unpreserved
K	E300	Sulfate, Chloride	28 days for liquid unpreserved
	E300	Nitrate, Nitrite	48 hours for liquid unpreserved
L	SM2320B	Alkalinity	14 days for liquid unpreserved
M	RSK175	Dissolved Gases	14 days for liquid, preserved 7 days for liquid unpreserved
N	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid, preserved
O	SM5310C	Total Organic Carbon	28 days for liquid, preserved
P	SM4500-S2-D	TOTAL SULFIDES	7 days for liquid, preserved

TABLE 3
REANALYSIS SUMMARY
HNA WHIDBEY MARINE

Lab ID	Rejected Analysis Date	Method	Analyte
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aliphatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C10-C12) Aromatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C12-C13) Aromatic
2401315-001	1/24/24 20:00	NWTPH-VPH	Volatile Petroleum Hydrocarbons (C8-C10) Aromatic
2402100-001	2/7/24 20:43	E300	Nitrate
401180-02	1/15/24 15:43	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
401180-02	1/15/24 15:43	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
401180-02	1/16/24 22:32	SW8270E	Benzo(a)pyrene
401180-02	1/16/24 22:32	SW8270E	Benzo(b)fluoranthene
401180-02	1/16/24 22:32	SW8270E	Benzo(g,h,i)perylene
401180-02	1/16/24 22:32	SW8270E	Benzo(k)fluoranthene
401180-02	1/16/24 22:32	SW8270E	Dibenz(a,h)anthracene
401180-02	1/16/24 22:32	SW8270E	Indeno(1,2,3-cd)pyrene
401269-08	1/23/24 15:48	SW8260D	1,2,4-Trimethylbenzene
401269-08	1/23/24 15:48	SW8260D	1,3,5-Trimethylbenzene
401269-08	1/24/24 19:44	SW8270E	2-Methylnaphthalene
401269-08	1/24/24 19:44	SW8270E	Naphthalene
401358-07	1/31/24 13:15	SW8260D	1,2,4-Trimethylbenzene
401358-07	1/31/24 13:15	SW8260D	1,3,5-Trimethylbenzene
401358-07	1/31/24 13:15	SW8260D	Ethylbenzene
401358-07	1/31/24 13:15	SW8260D	m,p-Xylenes
401358-07	1/31/24 13:15	SW8260D	Naphthalene
401358-07	1/31/24 13:15	SW8260D	n-Propylbenzene
401358-07	1/31/24 13:15	SW8260D	o-Xylene
401358-07	1/31/24 13:15	SW8260D	Toluene
401358-14	1/31/24 14:29	SW8260D	1,2,4-Trimethylbenzene
401358-14	1/31/24 14:29	SW8260D	1,3,5-Trimethylbenzene
401358-14	1/31/24 14:29	SW8260D	Ethylbenzene
401358-14	1/31/24 14:29	SW8260D	Isopropylbenzene (Cumene)
401358-14	1/31/24 14:29	SW8260D	m,p-Xylenes
401358-14	1/31/24 14:29	SW8260D	Naphthalene
401358-14	1/31/24 14:29	SW8260D	n-Propylbenzene
401358-14	1/31/24 14:29	SW8260D	o-Xylene
401358-14	1/31/24 14:29	SW8260D	Toluene
401358-14	1/30/24 18:10	SW8270E	1-Methylnaphthalene
401358-14	1/30/24 18:10	SW8270E	2-Methylnaphthalene
401358-14	1/30/24 18:10	SW8270E	Naphthalene
401358-23	1/31/24 14:53	SW8260D	1,2,4-Trimethylbenzene
401358-23	1/31/24 14:53	SW8260D	1,3,5-Trimethylbenzene
401358-23	1/31/24 14:53	SW8260D	Ethylbenzene
401358-23	1/31/24 14:53	SW8260D	Hexane
401358-23	1/31/24 14:53	SW8260D	Isopropylbenzene (Cumene)
401358-23	1/31/24 14:53	SW8260D	m,p-Xylenes

Lab ID	Rejected Analysis Date	Method	Analyte
401358-23	1/31/24 14:53	SW8260D	Naphthalene
401358-23	1/31/24 14:53	SW8260D	n-Propylbenzene
401358-23	1/31/24 14:53	SW8260D	o-Xylene
401358-23	1/31/24 14:53	SW8260D	Toluene
401358-23	1/30/24 20:54	SW8270E	2-Methylnaphthalene
402067-04	2/8/24 19:52	SW8270E	Naphthalene
402067-04	2/7/24 0:00	SW8260D	1,1,1,2-Tetrachloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,1-Trichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,2,2-Tetrachloroethane
402067-04	2/7/24 0:00	SW8260D	1,1,2-Trichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloroethane
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	1,1-Dichloropropene
402067-04	2/19/24 19:30	SW8260D	1,2,3-Trichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2,3-Trichloropropane
402067-04	2/7/24 0:00	SW8260D	1,2,4-Trichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2,4-Trimethylbenzene
402067-04	2/7/24 0:00	SW8260D	1,2-Dibromo-3-chloropropane (DBCP)
402067-04	2/7/24 0:00	SW8260D	1,2-Dibromoethane (Ethylene Dibromide)
402067-04	2/7/24 0:00	SW8260D	1,2-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,2-Dichloroethane
402067-04	2/7/24 0:00	SW8260D	1,2-Dichloropropane
402067-04	2/7/24 0:00	SW8260D	1,3,5-Trimethylbenzene
402067-04	2/7/24 0:00	SW8260D	1,3-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	1,3-Dichloropropane
402067-04	2/7/24 0:00	SW8260D	1,4-Dichlorobenzene
402067-04	2/7/24 0:00	SW8260D	2,2-Dichloropropane
402067-04	2/19/24 19:30	SW8260D	2-Butanone (Methyl Ethyl Ketone)
402067-04	2/7/24 0:00	SW8260D	2-Chlorotoluene
402067-04	2/7/24 0:00	SW8260D	2-Hexanone (Methyl Butyl Ketone)
402067-04	2/8/24 19:52	SW8270E	2-Methylnaphthalene
402067-04	2/7/24 0:00	SW8260D	2-Phenylbutane (sec-Butylbenzene)
402067-04	2/7/24 0:00	SW8260D	4-Chlorotoluene
402067-04	2/7/24 0:00	SW8260D	4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)
402067-04	2/7/24 0:00	SW8260D	Acetone
402067-04	2/7/24 0:00	SW8260D	Benzene
402067-04	2/7/24 0:00	SW8260D	Bromobenzene
402067-04	2/7/24 0:00	SW8260D	Bromodichloromethane
402067-04	2/7/24 0:00	SW8260D	Bromoform
402067-04	2/7/24 0:00	SW8260D	Bromomethane (Methyl Bromide)
402067-04	2/7/24 0:00	SW8260D	Carbon tetrachloride
402067-04	2/7/24 0:00	SW8260D	Chlorobenzene
402067-04	2/7/24 0:00	SW8260D	Chloroethane

TABLE 3
REANALYSIS SUMMARY
HNA WHIDBEY MARINE

Lab ID	Rejected Analysis Date	Method	Analyte
402067-04	2/7/24 0:00	SW8260D	Chloroform (Trichloromethane)
402067-04	2/7/24 0:00	SW8260D	Chloromethane (Methyl Chloride)
402067-04	2/7/24 0:00	SW8260D	cis-1,2-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	cis-1,3-Dichloropropene
402067-04	2/7/24 0:00	SW8260D	Cymene (p-Isopropyltoluene)
402067-04	2/7/24 0:00	SW8260D	Dibromochloromethane
402067-04	2/7/24 0:00	SW8260D	Dibromomethane
402067-04	2/7/24 0:00	SW8260D	Dichlorodifluoromethane (CFC-12)
402067-04	2/7/24 0:00	SW8260D	Ethylbenzene
402067-04	2/7/24 0:00	SW8260D	Hexachlorobutadiene
402067-04	2/7/24 0:00	SW8260D	Hexane
402067-04	2/7/24 0:00	SW8260D	Isopropylbenzene (Cumene)
402067-04	2/7/24 0:00	SW8260D	m,p-Xylenes
402067-04	2/7/24 0:00	SW8260D	Methyl Tert Butyl Ether (MTBE)
402067-04	2/19/24 19:30	SW8260D	Methylene chloride (Dichloromethane)
402067-04	2/7/24 0:00	SW8260D	Naphthalene
402067-04	2/7/24 0:00	SW8260D	n-Propylbenzene
402067-04	2/7/24 0:00	SW8260D	o-Xylene
402067-04	2/7/24 0:00	SW8260D	Styrene
402067-04	2/7/24 0:00	SW8260D	tert-Butylbenzene
402067-04	2/19/24 19:30	SW8260D	Tetrachloroethene
402067-04	2/19/24 19:30	SW8260D	Toluene
402067-04	2/7/24 0:00	SW8260D	trans-1,2-Dichloroethene
402067-04	2/7/24 0:00	SW8260D	trans-1,3-Dichloropropene
402067-04	2/19/24 19:30	SW8260D	Trichloroethene
402067-04	2/7/24 0:00	SW8260D	Trichlorofluoromethane (CFC-11)
402067-04	2/7/24 0:00	SW8260D	Vinyl chloride
402092-01	2/8/24 19:14	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-01	2/8/24 19:14	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-02	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-02	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-03	2/9/24 10:37	SW8270E	Naphthalene
402092-03	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-03	2/8/24 19:38	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402092-04	2/9/24 12:16	SW8270E	Naphthalene
402092-04	2/8/24 0:00	NWTPH-DX	Total Petroleum Hydrocarbons (C10-C25) DRO
402092-04	2/8/24 0:00	NWTPH-DX	Total Petroleum Hydrocarbons (C25-C36) ORO
402114-01	2/9/24 11:38	NWTPH-DX	Diesel Range Hydrocarbons (DRH)
402114-01	2/9/24 11:38	NWTPH-DX	Residual Range Hydrocarbons
402114-02	2/9/24 11:38	NWTPH-DX	Diesel Range Hydrocarbons (DRH)
402114-02	2/9/24 11:38	NWTPH-DX	Residual Range Hydrocarbons

TABLE 4
MATRIX SPIKE/MATRIX SPIKE DUPLICATES
HNA WHIDBEY MARINE

Sample Type	Method	Batch ID	Analyte	%R/RPD	Qualifier	Affected Samples
MS	NWTPH-EPH	2401469-001	Aromatic Hydrocarbon (C10-C12)	132% /135%	NA	None, confirmation matrix spike within limits
MS/MSD	SW8260D	401358-24	Benzene	132%/130%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Toluene	135%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,3-Dichloropropane	142%/148%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Tetrachloroethene	1.35	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2-Dibromoethane (EDB)	1.43	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Chlorobenzene	135%/140%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Ethylbenzene	139%/142%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	m,p-Xylene	138%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	o-Xylene	135%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Styrene	140%/143%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Bromobenzene	146%/143%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,1,2,2-Tetrachloroethane	149%/146%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2,3-Trichloropropane	157%/153%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	2-Chlorotoluene	143%/140%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	4-Chlorotoluene	145%/142%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	tert-Butylbenzene	141%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	sec-Butylbenzene	1.48	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,3-Dichlorobenzene	134%/134%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,4-Dichlorobenzene	141%/138%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	1,2-Dichlorobenzene	139%/139%	J/None	None, sample ND
MS/MSD	SW8260D	401358-24	Hexachlorobutadiene	151%/147%	J/None	None, sample ND
MS	NWTPH-VPH	2402008-005	Aliphatic Hydrocarbon (C10-C12)	63%	NA	None, native sample > 4x the spike added
MS	NWTPH-VPH	2402008-005	Aromatic Hydrocarbon (C10-C12)	15.60%	NA	None, native sample > 4x the spike added
MS	NWTPH-VPH	2402008-005	Aromatic Hydrocarbon (C12-C13)	68.80%	NA	None, native sample > 4x the spike added

TABLE 5
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C10-C12) Aliphatic	2.13 Q+	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C10-C12) Aromatic	1.29 Q-	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C12-C13) Aromatic	1.22 Q-	R	VCM
401180	NWTPH-VPH	MW-19D-S2	2401315-001	Volatile Petroleum Hydrocarbons (C8-C10) Aromatic	0.831 Q -J	R	VCM
402092	E300	MW-19D-W-20240206	2402100-001	Nitrate (as N)	34.7 E	R	EXE
401180	SW8270E	MW-19D-S2	401180-02	Benzo(a)pyrene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(b)fluoranthene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(g,h,i)perylene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Benzo(k)fluoranthene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Dibenz(a,h)anthracene	ND UJ	R	VCM
401180	SW8270E	MW-19D-S2	401180-02	Indeno(1,2,3-cd)pyrene	ND UJ	R	VCM
401180	NWTPH-DX	MW-19D-S2	401180-02	Total Petroleum Hydrocarbons (C10-C25) DRO	370	R	VCM
401180	NWTPH-DX	MW-19D-S2	401180-02	Total Petroleum Hydrocarbons (C25-C36) ORO	1700	R	VCM
401269	SW8260D	MW-21D-S7	401269-08	1,2,4-Trimethylbenzene	19 E	R	EXE
401269	SW8260D	MW-21D-S7	401269-08	1,3,5-Trimethylbenzene	8.5 E	R	EXE
401269	SW8270E	MW-21D-S7	401269-08	2-Methylnaphthalene	16 E	R	EXE
401269	SW8270E	MW-21D-S7	401269-08	Naphthalene	6.5 E	R	EXE
401269	SW8260D	MW-22D-S1	401269-09	1,2-Dibromo-3-chloropropane (DBCP)	0.5 EJ	R	EXE
401269	SW8260D	MW-22D-S1	401269-09	Acetone	5 EJ	R	EXE
401269	SW8260D	MW-23D-S1	401269-17	1,2-Dibromo-3-chloropropane (DBCP)	0.5 EJ	R	EXE
401269	SW8260D	MW-23D-S1	401269-17	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S1	401358-01	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S2	401358-02	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S3	401358-03	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-S4	401358-04	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	1,2,4-Trimethylbenzene	120 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	1,3,5-Trimethylbenzene	66 E	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401358	SW8260D	HA-1-DUP	401358-07	Ethylbenzene	69 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	m,p-Xylenes	240 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	Naphthalene	43 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	n-Propylbenzene	34 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	o-Xylene	120 E	R	EXE
401358	SW8260D	HA-1-DUP	401358-07	Toluene	120 E	R	EXE
401358	SW8260D	HA-2-S1.5	401358-08	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S2	401358-09	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S3	401358-10	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S4	401358-11	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S5	401358-12	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-2-S7	401358-14	1,2,4-Trimethylbenzene	180E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	1,3,5-Trimethylbenzene	110E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	1-Methylnaphthalene	13E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	2-Methylnaphthalene	27E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Ethylbenzene	120E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Hexane	49E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Isopropylbenzene (Cumene)	18E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	m,p-Xylenes	400E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Naphthalene	75E	R	EXE
401358	SW8270E	HA-2-S7	401358-14	Naphthalene	24E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	n-Propylbenzene	73E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	o-Xylene	250E	R	EXE
401358	SW8260D	HA-2-S7	401358-14	Toluene	250E	R	EXE
401358	SW8260D	HA-2-S8	401358-15	Trichlorofluoromethane (CFC-11)	0.5 EJ	R	EXE
401358	SW8260D	HA-3-S1	401358-18	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S2	401358-19	Acetone	5 EJ	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
401358	SW8260D	HA-3-S3	401358-20	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S4	401358-21	Acetone	5 EJ	R	EXE
401358	SW8260D	HA-3-S6	401358-23	1,2,4-Trimethylbenzene	200E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	1,3,5-Trimethylbenzene	120E	R	EXE
401358	SW8270E	HA-3-S6	401358-23	2-Methylnaphthalene	11E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Ethylbenzene	150E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Hexane	260E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Isopropylbenzene (Cumene)	25E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	m,p-Xylenes	430E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Naphthalene	76E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	n-Propylbenzene	93E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	o-Xylene	240E	R	EXE
401358	SW8260D	HA-3-S6	401358-23	Toluene	130 E	R	EXE
401358	SW8260D	MW-23D-S3	401358-24	Acetone	5 EJ	R	EXE
401358	SW8260D	MW-23D-S4	401358-25	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S1	402019-01	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S2	402019-02	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S3	402019-03	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S4	402019-04	Acetone	5 EJ	R	EXE
402019	SW8260D	HA-4-S6	402019-06	Acetone	5 EJ	R	EXE
402067	SW8260D	MW-22D-20240205	402067-03	Acetone	50 EJ	R	EXE
402067	SW8260D	MW-22D-20240205	402067-03	Trichlorofluoromethane (CFC-11)	1 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	1,1,1,2-Tetrachloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,1-Trichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,2,2-Tetrachloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1,2-Trichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloroethane	ND	R	VCM

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,1-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,3-Trichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,4-Trichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,4-Trimethylbenzene	580	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dibromo-3-chloropropane (DBCP)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dibromoethane (Ethylene Dibromide)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3,5-Trimethylbenzene	220	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,3-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,4-Dichlorobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2,2-Dichloropropane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Chlorotoluene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Hexanone (Methyl Butyl Ketone)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	2-Phenylbutane (sec-Butylbenzene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	4-Chlorotoluene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	4-Methyl-2-Pentanone (Methyl Isobutyl Ketone)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Benzene	11 T	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromobenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromodichloromethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromoform	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Bromomethane (Methyl Bromide)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Carbon tetrachloride	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Chlorobenzene	ND	R	VCM

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8260D	MW-23D-20240205	402067-04	Chloroethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Chloroform (Trichloromethane)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	cis-1,2-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	cis-1,3-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Cymene (p-Isopropyltoluene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dibromochloromethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dibromomethane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Dichlorodifluoromethane (CFC-12)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Ethylbenzene	1300	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Hexachlorobutadiene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Hexane	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Isopropylbenzene (Cumene)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	m,p-Xylenes	4400	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Methyl Tert Butyl Ether (MTBE)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Methylene chloride (Dichloromethane)	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Naphthalene	380	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	n-Propylbenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	o-Xylene	1000	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Styrene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	tert-Butylbenzene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Tetrachloroethene	ND UJ	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	trans-1,2-Dichloroethene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	trans-1,3-Dichloropropene	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Trichloroethene	ND UJ	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	Vinyl chloride	ND	R	VCM
402067	SW8260D	MW-23D-20240205	402067-04	1,2,3-Trichlorobenzene	50 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	2-Butanone (Methyl Ethyl Ketone)	1000 EJ	R	EXE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402067	SW8270E	MW-23D-20240205	402067-04	2-Methylnaphthalene	72 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Acetone	10000 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Acetone	2500 EJ	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Chloromethane (Methyl Chloride)	500 EJ	R	EXE
402067	SW8270E	MW-23D-20240205	402067-04	Naphthalene	160 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Toluene	14000 E	R	EXE
402067	SW8260D	MW-23D-20240205	402067-04	Trichlorofluoromethane (CFC-11)	200 EJ	R	EXE
402092	NWTPH-DX	MW-19D-W-20240206	402092-01	Total Petroleum Hydrocarbons (C10-C25) DRO	ND	R	VCM
402092	NWTPH-DX	MW-19D-W-20240206	402092-01	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-19D-W-20240206	402092-01	2-Butanone (Methyl Ethyl Ketone)	20 EJ	R	EXE
402092	SW8260D	MW-19D-W-20240206	402092-01	Acetone	50 EJ	R	EXE
402092	NWTPH-DX	MW-20D-W-20240206	402092-02	Total Petroleum Hydrocarbons (C10-C25) DRO	110	R	VCM
402092	NWTPH-DX	MW-20D-W-20240206	402092-02	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-20D-W-20240206	402092-02	2-Butanone (Methyl Ethyl Ketone)	20 EJ	R	EXE
402092	SW8260D	MW-20D-W-20240206	402092-02	Acetone	50 EJ	R	EXE
402092	NWTPH-DX	MW-21D-W-20240206	402092-03	Total Petroleum Hydrocarbons (C10-C25) DRO	1600	R	VCM
402092	NWTPH-DX	MW-21D-W-20240206	402092-03	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	MW-21D-W-20240206	402092-03	2-Butanone (Methyl Ethyl Ketone)	200 EJ	R	EXE
402092	SW8260D	MW-21D-W-20240206	402092-03	Acetone	500 EJ	R	EXE
402092	SW8270E	MW-21D-W-20240206	402092-03	Naphthalene	37 E	R	EXE
402092	NWTPH-DX	DUP-01-20240206	402092-04	Total Petroleum Hydrocarbons (C10-C25) DRO	1600	R	VCM
402092	NWTPH-DX	DUP-01-20240206	402092-04	Total Petroleum Hydrocarbons (C25-C36) ORO	ND	R	VCM
402092	SW8260D	DUP-01-20240206	402092-04	2-Butanone (Methyl Ethyl Ketone)	200 EJ	R	EXE
402092	SW8260D	DUP-01-20240206	402092-04	Acetone	500 EJ	R	EXE
402092	SW8270E	DUP-01-20240206	402092-04	Naphthalene	39 E	R	EXE
402114	NWTPH-DX	MW-10D-W-20240207	402114-01	Diesel Range Hydrocarbons (DRH)	ND	R	VCM
402114	NWTPH-DX	MW-10D-W-20240207	402114-01	Residual Range Hydrocarbons	ND	R	VCM

TABLE 5
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Sample ID	Lab ID	Analyte	Reported Result	Validated Result	Reason for Qualifier
402114	NWTPH-DX	MW-11D-W-20240207	402114-02	Diesel Range Hydrocarbons (DRH)	71	R	VCM
402114	NWTPH-DX	MW-11D-W-20240207	402114-02	Residual Range Hydrocarbons	ND	R	VCM

Notes:

VCM *Validator's choice of method.*

FDP *Field duplicate relative percent difference exceeds limits or exceeds the absolute difference rule (used when results are less than 5x the RL).*

EXE *Result exceeds the calibration range.*

DUP *Laboratory duplicate relative percent difference exceeds limits.*

SUR *Surrogate percent recovery outside acceptance limits.*

HTQ *Holding Time exceeded.*

LCS *Laboratory Control/Laboratory Control Spike Duplicate percent recoveries or relative percent difference were outside acceptance limits.*

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401419

January 30, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 1/23/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/12/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401419

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401419-001	MW-21D-S2	01/16/2024 10:50 AM	01/23/2024 1:30 PM
2401419-002	MW-21D-S4	01/16/2024 10:30 AM	01/23/2024 1:30 PM
2401419-003	MW-21D-S7	01/16/2024 2:30 PM	01/23/2024 1:30 PM
2401419-004	MW-23D-S2	01/19/2024 3:05 PM	01/23/2024 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401419**
Date: **1/30/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

2/12/24- Revised report includes an updated Sample ID for 2401419-004 per the COC.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401419-001 **Collection Date:** 1/16/2024 10:50:00 AM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 1:05:00 PM

Lab ID: 2401419-002 **Collection Date:** 1/16/2024 10:30:00 AM
Client Sample ID: **MW-21D-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 2:32:00 PM

Lab ID: 2401419-003 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:15:00 PM

Lab ID: 2401419-004 **Collection Date:** 1/19/2024 3:05:00 PM
Client Sample ID: **MW-23D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:32:00 PM

Work Order: 2401419
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42741**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MBLKS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864259**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42741**	SampType: **LCS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **LCSS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864260**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.07	0.150	1.000	0	107	80	120				

Sample ID: **2401419-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864262**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2401419-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864263**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125				

Sample ID: **2401419-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864264**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.04	0.150	1.000	0	104	75	125	1.106	6.63	20	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401419
Logged by:	Clare Griggs	Date Received:	1/23/2024 1:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 401269

PO #: D-641

REMARKS: EIM and EQuIS 4

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Total Organic Carbon	Nitrate	Nitrite	Sulfate	RSK-175						Notes
MW-21D-S2		1/16/2024	1050	soil	1	x										
MW-21D-S4		1/16/2024	1030	soil	1	x										
MW-21D-S7		1/16/2024	1430	soil	1	x										
MW-23D-S2		1/19/2024	1505	soil	1	x										

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	1/23/24	0840
Received by:	Nathan Koppes	F&B	1/23/24	1330
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 8, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on January 15, 2024 from the Whidbey Marine 024475-001, F&BI 401180 project. The sample IDs have been amended.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0207R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 7, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the additional results from the testing of material submitted on January 15, 2024 from the Whidbey Marine 024475-001, F&BI 401180 project. There are 5 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0207R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 024475-001, F&BI 401180 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401180 -01	MW-19D-S1
401180 -02	MW-19D-S2
401180 -03	MW-19D-S3
401180 -04	MW-19D-S4
401180 -05	MW-19D-S5
401180 -06	MW-19D-S6
401180 -07	HA-2-51
401180 -08	MW-20D-S1
401180 -09	MW-20D-S2
401180 -10	MW-20D-S3
401180 -11	MW-20D-S4
401180 -12	MW-20D-S5

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 024475-001
Date Extracted:	01/17/24	Lab ID:	401180-12 1/0.5
Date Analyzed:	01/17/24	Data File:	011717.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 024475-001
Date Extracted:	01/17/24	Lab ID:	04-0105 mb 1/0.5
Date Analyzed:	01/17/24	Data File:	011706.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Date of Report: 02/07/24
Date Received: 01/15/24
Project: Whidbey Marine 024475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401180-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2	<0.05	82	83	10-138	1
Chloroethane	mg/kg (ppm)	2	<0.5	82	80	10-176	2
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	88	86	10-160	2
Methylene chloride	mg/kg (ppm)	2	<0.5	78	74	10-156	5
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	88	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	91	91	19-140	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	91	25-135	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	96	95	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	91	91	10-156	0
Trichloroethene	mg/kg (ppm)	2	<0.02	90	90	21-139	0
Tetrachloroethene	mg/kg (ppm)	2	<0.025	95	97	20-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Chloroethane	mg/kg (ppm)	2	89	10-163
1,1-Dichloroethene	mg/kg (ppm)	2	96	47-128
Methylene chloride	mg/kg (ppm)	2	88	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	94	64-135
cis-1,2-Dichloroethene	mg/kg (ppm)	2	94	64-135
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
Trichloroethene	mg/kg (ppm)	2	96	63-139
Tetrachloroethene	mg/kg (ppm)	2	104	68-128

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401180

SAMPLE CHAIN OF CUSTODY 01/15/24 N2

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	Dx with Silica Gel PCBs EPA 8082	Pb+As	EDB EDC/MTBE	EPH/VPH (Hold)	BTEX	Notes
MW-19D-S1	01 A-F	1/10/24	0940	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-19D-S2	02		1000			X	X			X	X	A	X	X	X		w/ TPH analyses
MW-19D-S3	03		1110			X	X			X	X		X	X			Hold EPH/VPH
MW-19D-S4	04		1120			X	X			X	X		X	X	O		pending TPH
MW-19D-S5	05		1335			X	X			~~X~~	~~X~~					X	results
MW-19D-S6	06		1630			X	X			X	X		X	X	O		"O" = Hold
HA-2-S1	07	1/9/24	1300												O		
MW-20D-S1	08	1/11/24	1430			X	X			X	X		X	X			
MW-20D-S2	09		1450			X	X			X	X		X	X			
MW-20D-S3	10	1/12/24	1155			X	X			X	X		X	X			

x-EPH and VPH on MW-19D-S2 per HG 01/16/24 ME

A-per HG 01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Takahara	HA	1/15/24	~~0740~~ 1120
Received by:	ANHPHAN	F&B	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401180

SAMPLE CHAIN OF CUSTODY

01/15/24 N2

Page # 2 of 2

Report To H. Good, U. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PL + As, Fe, Mn	MTBE, EDB,	BTEX	cVOCs	A-per HG 02/02/24 ME Notes
MW-20P-54	11 A-F	1/15/24	1145	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-20P-55	12 ↓	↓	1415	↓	6	X	X			X	X		X	X	X	A	w/TPH analysis

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/15/24	~~11~~ 20
Received by:	ANHPHAN	FSB	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 9, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on January 15, 2024 from the Whidbey Marine 0204475-001, F&BI 401180 project. Per your request, the NWTPH-Dx analysis of sample MW-19D-S2 was also reported as a single diesel extended result.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0202R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

February 2, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 15, 2024 from the Whidbey Marine 0204475-001, F&BI 401180 project. There are 49 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0202R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 15, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 401180 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401180 -01	MW-19D-S1
401180 -02	MW-19D-S2
401180 -03	MW-19D-S3
401180 -04	MW-19D-S4
401180 -05	MW-19D-S5
401180 -06	MW-19D-S6
401180 -07	HA-2-S1
401180 -08	MW-20D-S1
401180 -09	MW-20D-S2
401180 -10	MW-20D-S3
401180 -11	MW-20D-S4
401180 -12	MW-20D-S5

Sample MW-19D-S2 was sent to Fremont Analytical for EPH and VPH analyses. The report is enclosed.

Acetone in the 8260D laboratory control sample did not meet the acceptance criteria. The data were flagged accordingly.

An 8270E internal standard failed the acceptance criteria for sample MW-19D-S2. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: NA
Date Analyzed: 01/15/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-19D-S1 401180-01	9
MW-19D-S2 401180-02	8
MW-19D-S3 401180-03	3
MW-19D-S4 401180-04	5
MW-19D-S5 401180-05	19
MW-19D-S6 401180-06	17
MW-20D-S1 401180-08	5
MW-20D-S2 401180-09	7
MW-20D-S3 401180-10	6
MW-20D-S4 401180-11	3
MW-20D-S5 401180-12	22

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/16/24
Date Analyzed: 01/16/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S1 401180-01	<5	112
MW-19D-S2 401180-02	10	99
MW-19D-S3 401180-03	<5	110
MW-19D-S4 401180-04	<5	113
MW-19D-S5 401180-05	<5	111
MW-19D-S6 401180-06	<5	113
MW-20D-S1 401180-08	<5	113
MW-20D-S2 401180-09	<5	112
MW-20D-S3 401180-10	<5	112
MW-20D-S4 401180-11	<5	114

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/16/24
Date Analyzed: 01/16/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S5 401180-12	<5	114
Method Blank 04-0019 MB	<5	107

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/15/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S1 401180-01	<50	<250	104
MW-19D-S2 401180-02	370	1,700	107
MW-19D-S3 401180-03	<50	<250	107
MW-19D-S4 401180-04	<50	<250	103
MW-19D-S5 401180-05	<50	<250	104
MW-19D-S6 401180-06	<50	<250	102
MW-20D-S1 401180-08	<50	<250	103
MW-20D-S2 401180-09	<50	<250	102
MW-20D-S3 401180-10	<50	<250	102
MW-20D-S4 401180-11	<50	<250	104
MW-20D-S5 401180-12	<50	<250	101
Method Blank 04-145 MB	<50	<250	104

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/15/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S2 401180-02	1,500	107
Method Blank 04-145 MB	<50	104

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S2 401180-02	240	1,100	93
Method Blank 04-145 MB	<50	<250	96

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180
Date Extracted: 01/15/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Extended (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-S2 401180-02	1,300	107
Method Blank 04-145 MB	<50	104

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-01
Date Analyzed:	01/16/24	Data File:	401180-01.228
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.06
Lead	1.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-02
Date Analyzed:	01/16/24	Data File:	401180-02.229
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.19
Lead	2.93

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-03
Date Analyzed:	01/16/24	Data File:	401180-03.241
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.79
Lead	1.41

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-04
Date Analyzed:	01/16/24	Data File:	401180-04.242
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.56
Lead	1.23

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-06
Date Analyzed:	01/16/24	Data File:	401180-06.243
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.40
Lead	2.32

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-08
Date Analyzed:	01/16/24	Data File:	401180-08.247
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.33
Lead	1.17

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-09
Date Analyzed:	01/16/24	Data File:	401180-09.248
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.35
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-10
Date Analyzed:	01/16/24	Data File:	401180-10.249
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.93
Lead	1.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	401180-11
Date Analyzed:	01/16/24	Data File:	401180-11.250
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.73
Lead	1.43

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/15/24	Lab ID:	I4-34 mb
Date Analyzed:	01/15/24	Data File:	I4-34 mb.145
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-01 1/0.5
Date Analyzed:	01/17/24	Data File:	011707.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-02 1/0.5
Date Analyzed:	01/17/24	Data File:	011708.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	84	120
Toluene-d8	105	73	128
4-Bromofluorobenzene	95	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0047
Hexane	<0.25	o-Xylene	0.0045
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.082
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0020	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.026
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-03 1/0.5
Date Analyzed:	01/17/24	Data File:	011709.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-04 1/0.5
Date Analyzed:	01/17/24	Data File:	011710.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-05 1/0.5
Date Analyzed:	01/17/24	Data File:	011711.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	84	120
Toluene-d8	106	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.001
Toluene	<0.001
Ethylbenzene	<0.001
m,p-Xylene	<0.002
o-Xylene	<0.001

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-06 1/0.5
Date Analyzed:	01/17/24	Data File:	011712.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-08 1/0.5
Date Analyzed:	01/17/24	Data File:	011713.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.013
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-09 1/0.5
Date Analyzed:	01/17/24	Data File:	011714.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.013
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-10 1/0.5
Date Analyzed:	01/17/24	Data File:	011715.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0092
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-11 1/0.5
Date Analyzed:	01/17/24	Data File:	011716.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	98	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0046
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	401180-12 1/0.5
Date Analyzed:	01/17/24	Data File:	011717.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	103	57	146

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.001
Toluene	<0.001
Ethylbenzene	<0.001
m,p-Xylene	<0.002
o-Xylene	<0.001

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/17/24	Lab ID:	04-0105 mb 1/0.5
Date Analyzed:	01/17/24	Data File:	011706.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 jl	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-01 1/5
Date Analyzed:	01/16/24	Data File:	011613.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	16	137
2-Fluorobiphenyl	75	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	76	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-02 1/25
Date Analyzed:	01/16/24	Data File:	011624.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74 d	16	137
2-Fluorobiphenyl	85 d	46	122
2,4,6-Tribromophenol	94 d	17	154
Terphenyl-d14	98 d	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	0.10
1-Methylnaphthalene	0.060
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	0.051
Benzo(a)pyrene	<0.05 J
Benzo(b)fluoranthene	<0.05 J
Benzo(k)fluoranthene	<0.05 J
Indeno(1,2,3-cd)pyrene	<0.05 J
Dibenz(a,h)anthracene	<0.05 J
Benzo(g,h,i)perylene	<0.05 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-02 1/250
Date Analyzed:	01/17/24	Data File:	011720.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70 d	16	137
2-Fluorobiphenyl	90 d	46	122
2,4,6-Tribromophenol	200 d	17	154
Terphenyl-d14	85 d	31	167

Compounds:	Concentration mg/kg (ppm)
Benzo(a)pyrene	<0.5
Benzo(b)fluoranthene	<0.5
Benzo(k)fluoranthene	<0.5
Indeno(1,2,3-cd)pyrene	<0.5
Dibenz(a,h)anthracene	<0.5
Benzo(g,h,i)perylene	<0.5

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-03 1/5
Date Analyzed:	01/16/24	Data File:	011614.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-04 1/5
Date Analyzed:	01/16/24	Data File:	011615.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	74	17	154
Terphenyl-d14	79	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-06 1/5
Date Analyzed:	01/16/24	Data File:	011616.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	16	137
2-Fluorobiphenyl	86	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-08 1/5
Date Analyzed:	01/16/24	Data File:	011617.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	82	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-09 1/5
Date Analyzed:	01/16/24	Data File:	011618.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	16	137
2-Fluorobiphenyl	75	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	75	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-10 1/5
Date Analyzed:	01/16/24	Data File:	011619.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	16	137
2-Fluorobiphenyl	78	46	122
2,4,6-Tribromophenol	73	17	154
Terphenyl-d14	81	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/15/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	401180-11 1/5
Date Analyzed:	01/16/24	Data File:	011620.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	16	137
2-Fluorobiphenyl	70	46	122
2,4,6-Tribromophenol	67	17	154
Terphenyl-d14	77	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/16/24	Lab ID:	04-0147 mb 1/5
Date Analyzed:	01/16/24	Data File:	011612.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	16	137
2-Fluorobiphenyl	95	46	122
2,4,6-Tribromophenol	80	17	154
Terphenyl-d14	90	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 401180-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	97	70-130

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401171-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	106	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	78-121

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401171-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	130	115	119	63-146	3

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	118	77-123

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401170-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	112	116	75-125	4
Lead	mg/kg (ppm)	50	<5	101	105	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	80-120
Lead	mg/kg (ppm)	50	95	80-120

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401180-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	57	56	10-142	2
Chloromethane	mg/kg (ppm)	2	<0.5	82	81	10-126	1
Vinyl chloride	mg/kg (ppm)	2	<0.05	82	83	10-138	1
Bromomethane	mg/kg (ppm)	2	<0.5	82	83	10-163	1
Chloroethane	mg/kg (ppm)	2	<0.5	82	80	10-176	2
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	82	81	10-176	1
Acetone	mg/kg (ppm)	10	<5	47	50	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	88	86	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	91	90	10-137	1
Methylene chloride	mg/kg (ppm)	2	<0.5	78	74	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	90	92	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	88	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	91	91	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	94	97	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	90	91	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	90	91	21-145	1
2-Butanone (MEK)	mg/kg (ppm)	10	<1	74	75	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	96	95	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	91	91	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	90	91	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	90	90	9-164	0
Benzene	mg/kg (ppm)	2	<0.03	90	89	29-129	1
Trichloroethene	mg/kg (ppm)	2	<0.02	90	90	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	92	90	30-135	2
Bromodichloromethane	mg/kg (ppm)	2	<0.05	95	95	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	87	91	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	96	92	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	96	96	28-144	0
Toluene	mg/kg (ppm)	2	<0.05	94	96	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	99	98	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	101	101	10-205	0
2-Hexanone	mg/kg (ppm)	10	<0.5	104	105	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	97	99	31-137	2
Tetrachloroethene	mg/kg (ppm)	2	<0.025	95	97	20-133	2
Dibromochloromethane	mg/kg (ppm)	2	<0.05	99	98	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	98	101	28-142	3
Chlorobenzene	mg/kg (ppm)	2	<0.05	97	97	32-129	0
Ethylbenzene	mg/kg (ppm)	2	<0.05	98	97	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	95	98	31-143	3
m,p-Xylene	mg/kg (ppm)	4	<0.1	96	97	34-136	1
o-Xylene	mg/kg (ppm)	2	<0.05	98	98	33-134	0
Styrene	mg/kg (ppm)	2	<0.05	98	98	35-137	0
Isopropylbenzene	mg/kg (ppm)	2	<0.05	96	99	31-142	3
Bromoform	mg/kg (ppm)	2	<0.05	97	100	21-156	3
n-Propylbenzene	mg/kg (ppm)	2	<0.05	105	104	23-146	1
Bromobenzene	mg/kg (ppm)	2	<0.05	107	104	34-130	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	104	18-149	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	107	105	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	107	108	25-144	1
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	101	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	102	102	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	104	102	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	104	102	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	105	106	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	107	107	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	103	101	30-131	2
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	103	103	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	101	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	101	106	11-161	5
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	106	105	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	119	118	10-142	1
Naphthalene	mg/kg (ppm)	2	<0.05	105	103	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	105	105	20-144	0

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	72	10-146
Chloromethane	mg/kg (ppm)	2	91	27-133
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Bromomethane	mg/kg (ppm)	2	86	10-201
Chloroethane	mg/kg (ppm)	2	89	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	90	10-196
Acetone	mg/kg (ppm)	10	51 vo	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	96	47-128
Hexane	mg/kg (ppm)	2	97	43-142
Methylene chloride	mg/kg (ppm)	2	88	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	94	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	94	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	97	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	94	64-135
Chloroform	mg/kg (ppm)	2	94	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	79	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	95	64-136
Carbon tetrachloride	mg/kg (ppm)	2	97	60-139
Benzene	mg/kg (ppm)	2	95	65-136
Trichloroethene	mg/kg (ppm)	2	96	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	93	61-145
Bromodichloromethane	mg/kg (ppm)	2	101	57-126
Dibromomethane	mg/kg (ppm)	2	97	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	99	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	99	65-143
Toluene	mg/kg (ppm)	2	103	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	108	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	108	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	108	67-128
Tetrachloroethene	mg/kg (ppm)	2	104	68-128
Dibromochloromethane	mg/kg (ppm)	2	106	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	108	66-129
Chlorobenzene	mg/kg (ppm)	2	104	67-128
Ethylbenzene	mg/kg (ppm)	2	106	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	104	64-121
m,p-Xylene	mg/kg (ppm)	4	104	68-128
o-Xylene	mg/kg (ppm)	2	104	67-129
Styrene	mg/kg (ppm)	2	107	67-129
Isopropylbenzene	mg/kg (ppm)	2	104	68-128
Bromoform	mg/kg (ppm)	2	112	56-132
n-Propylbenzene	mg/kg (ppm)	2	105	68-129
Bromobenzene	mg/kg (ppm)	2	108	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	107	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	107	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	111	61-137
2-Chlorotoluene	mg/kg (ppm)	2	105	69-128
4-Chlorotoluene	mg/kg (ppm)	2	104	67-127
tert-Butylbenzene	mg/kg (ppm)	2	103	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	110	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	106	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	105	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	111	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	110	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	118	50-153
Naphthalene	mg/kg (ppm)	2	105	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	107	61-126

Date of Report: 02/02/24
Date Received: 01/15/24
Project: Whidbey Marine 0204475-001, F&BI 401180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401180-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	77	75	50-150	3
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	78	76	50-150	3
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	74	72	50-150	3
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	83	82	50-150	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	80	79	50-150	1
Fluorene	mg/kg (ppm)	0.83	<0.01	78	78	50-150	0
Phenanthrene	mg/kg (ppm)	0.83	<0.01	80	81	10-170	1
Anthracene	mg/kg (ppm)	0.83	<0.01	84	82	37-139	2
Fluoranthene	mg/kg (ppm)	0.83	<0.01	90	89	10-203	1
Pyrene	mg/kg (ppm)	0.83	<0.01	83	84	10-208	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	89	88	37-146	1
Chrysene	mg/kg (ppm)	0.83	<0.01	85	84	36-144	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	92	91	40-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	82	83	45-157	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	87	84	50-150	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	101	103	24-145	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	99	101	31-137	2
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	96	97	14-141	1

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	81	59-105
2-Methylnaphthalene	mg/kg (ppm)	0.83	81	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	76	62-108
Acenaphthylene	mg/kg (ppm)	0.83	87	61-111
Acenaphthene	mg/kg (ppm)	0.83	84	61-110
Fluorene	mg/kg (ppm)	0.83	82	62-114
Phenanthrene	mg/kg (ppm)	0.83	86	64-112
Anthracene	mg/kg (ppm)	0.83	88	63-111
Fluoranthene	mg/kg (ppm)	0.83	93	66-115
Pyrene	mg/kg (ppm)	0.83	91	65-112
Benz(a)anthracene	mg/kg (ppm)	0.83	93	64-116
Chrysene	mg/kg (ppm)	0.83	90	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	94	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	86	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	89	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	106	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	104	67-131
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	67-126

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401180

SAMPLE CHAIN OF CUSTODY 01/15/24 N2

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME	PO #
Whidbey Marine	0204475-001
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	Dx with Silica Gel PCBs EPA 8082	Pb+As	EDB EDC/MTBE	EPH/VPH (Hold)	BTEX	Notes
MW-19D-S1	01 A-F	1/10/24	0940	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-19D-S2	02		1000			X	X			X	X	A	X	X	X		w/ TPH analyses
MW-19D-S3	03		1110			X	X			X	X		X	X			Hold EPH/VPH
MW-19D-S4	04		1120			X	X			X	X		X	X	O		pending TPH
MW-19D-S5	05		1335			X	X			~~X~~	~~X~~ A2					X	results
MW-19D-S6	06		1630			X	X			X	X		X	X	O		"O" = Hold
HA-2-S1	07	1/9/24	1300												O		
MW-20D-S1	08	1/11/24	1430			X	X			X	X		X	X			
MW-20D-S2	09		1450			X	X			X	X		X	X			
MW-20D-S3	10	1/12/24	1155			X	X			X	X		X	X			

x-EPH and VPH on MW-19D-S2 per HG 01/16/24 ME

A-per HG 01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Takahara	HA	1/15/24	~~0740~~ 1120
Received by:	ANHPHAN	F&B	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401180

SAMPLE CHAIN OF CUSTODY

01/15/24 N2

Page # 2 of 2

Report To H. Good, U. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

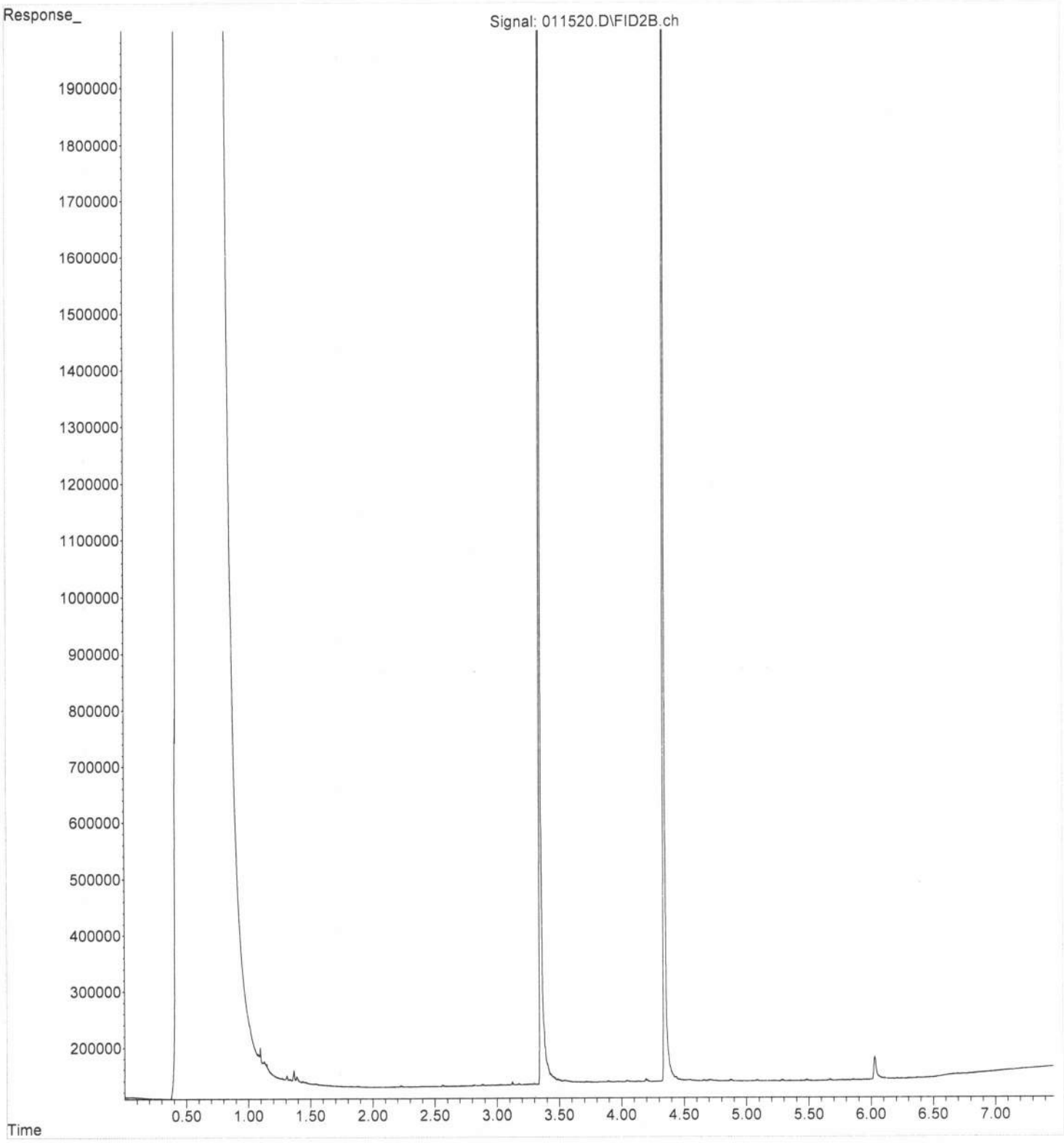
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Pb + As EDB	MTBE, EDB	BTEX	cVOCs	A-per HG 02/02/24 ME Notes
MW-20P-54	11 A-F	1/15/24	1145	Soil	6	X	X			X	X		X	X			Include chromatograms
MW-20P-55	12 ↓	↓	1415	↓	6	X	X			X	X		X	X	X	A	w/TPH analysis

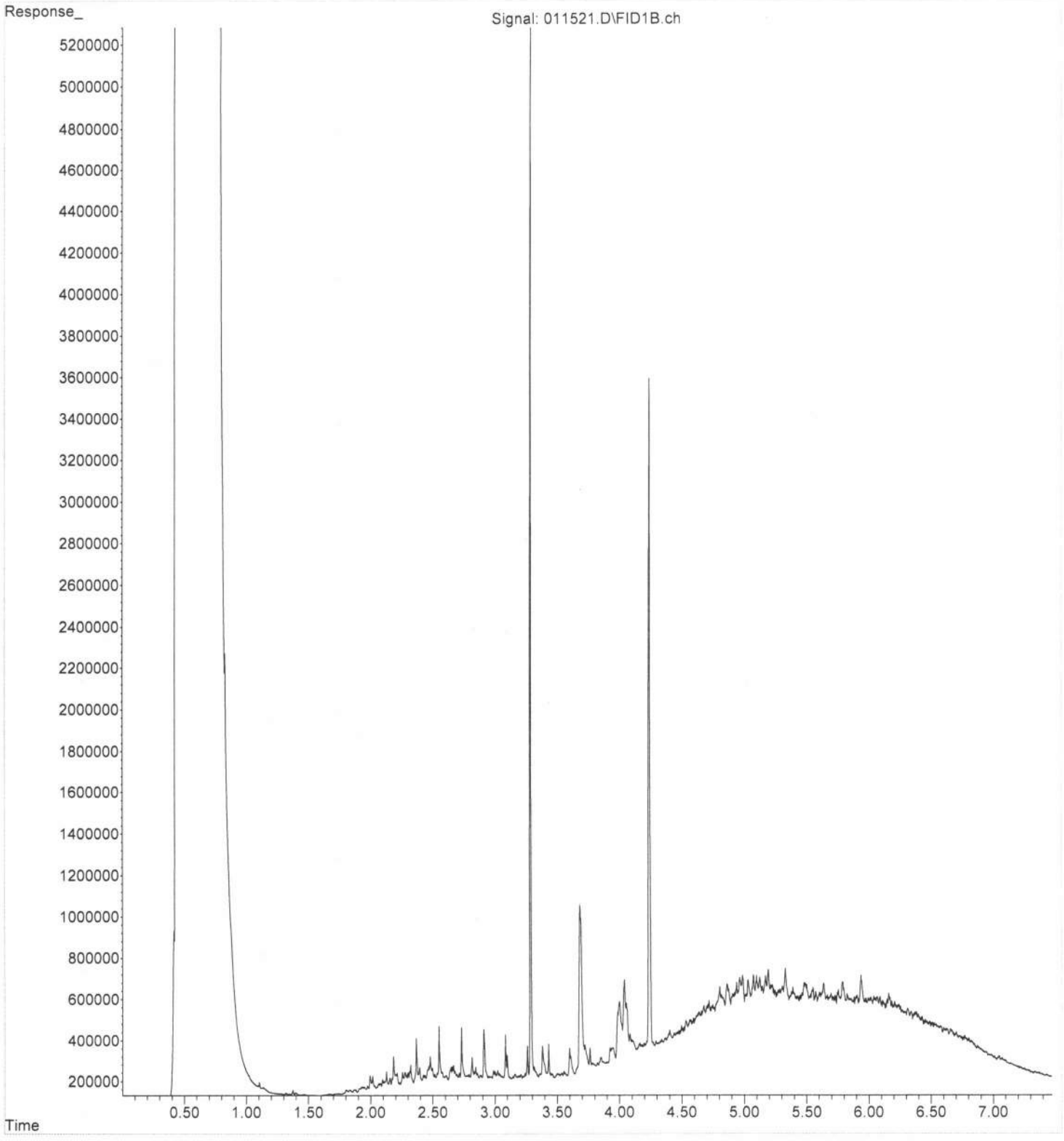
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/15/24	~~11~~ 20
Received by:	ANHPHAN	FSB	01/15/24	11:20
Relinquished by:		Samples received at 1 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

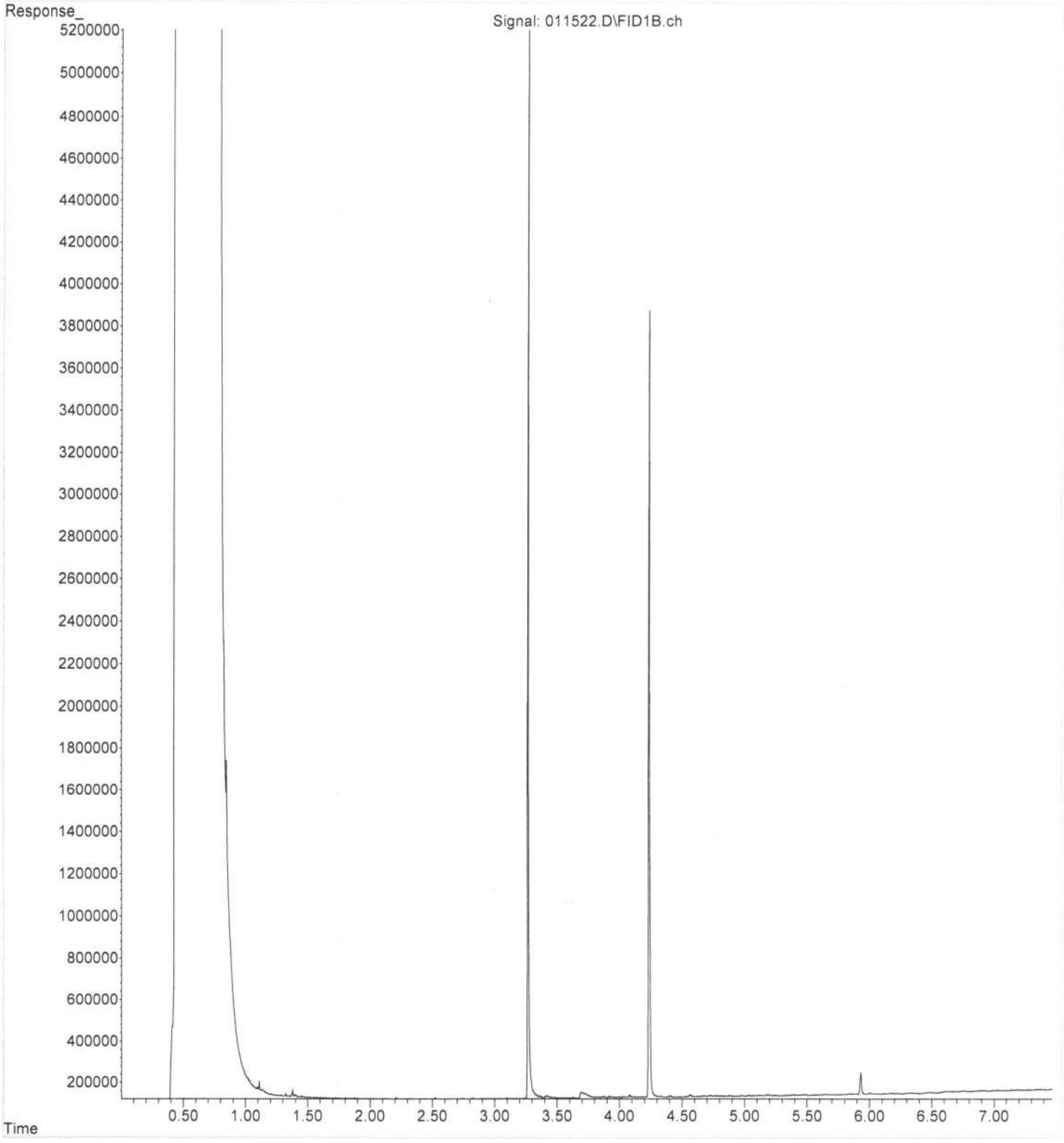
File :P:\Proc_GC13\01-15-24\011520.D
Operator : TL
Acquired : 15 Jan 2024 03:32 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-01
Misc Info : 87 01-16 ERR
Vial Number: 17



File :P:\Proc_GC13\01-15-24\011521.D
Operator : TL
Acquired : 15 Jan 2024 03:43 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-02
Misc Info : 8301.16 ERR
Vial Number: 18

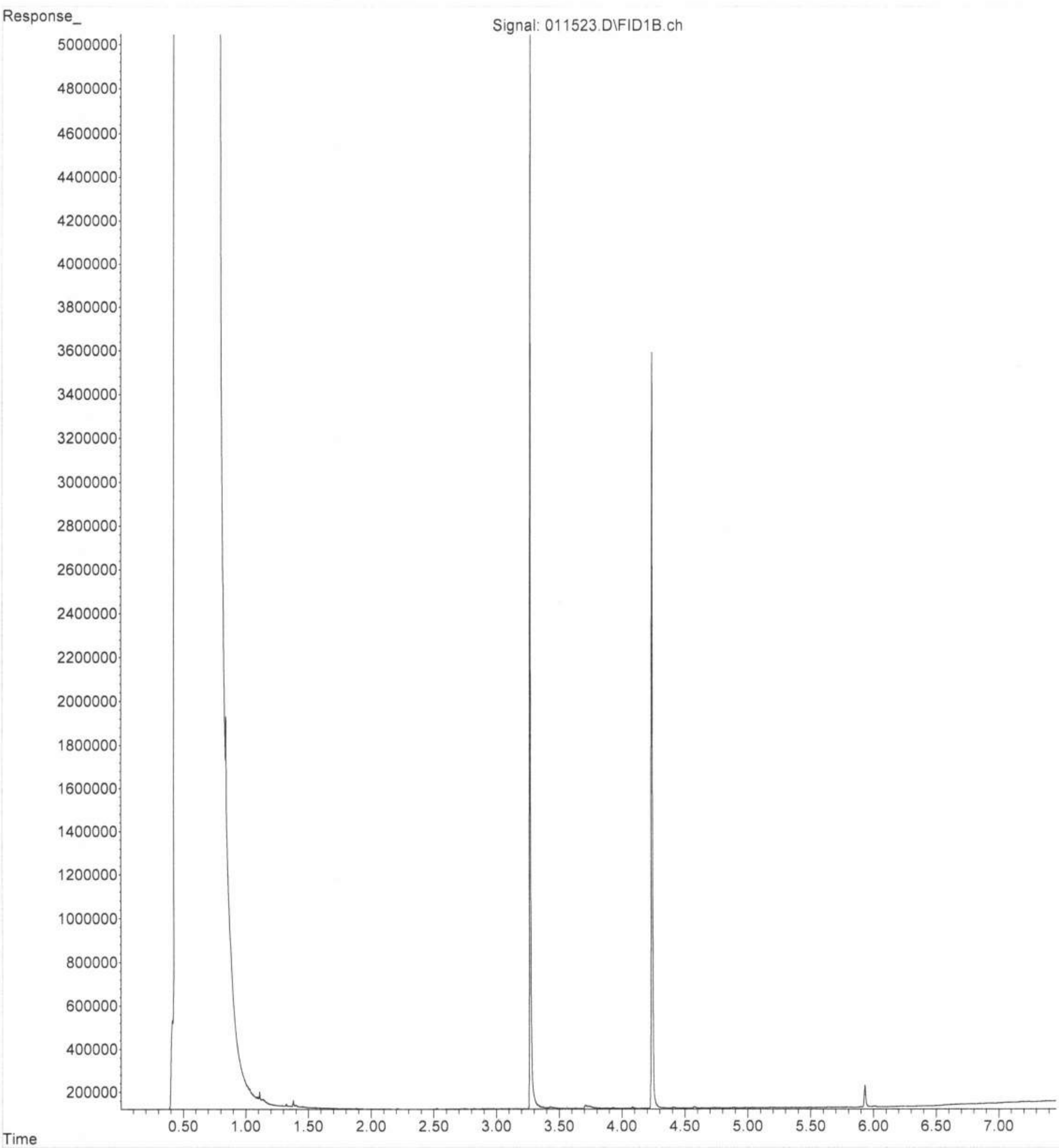


File :P:\Proc_GC13\01-15-24\011522.D
Operator : TL
Acquired : 15 Jan 2024 03:54 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401130-03
Misc Info : 8 Jan 16 ERR
Vial Number: 19

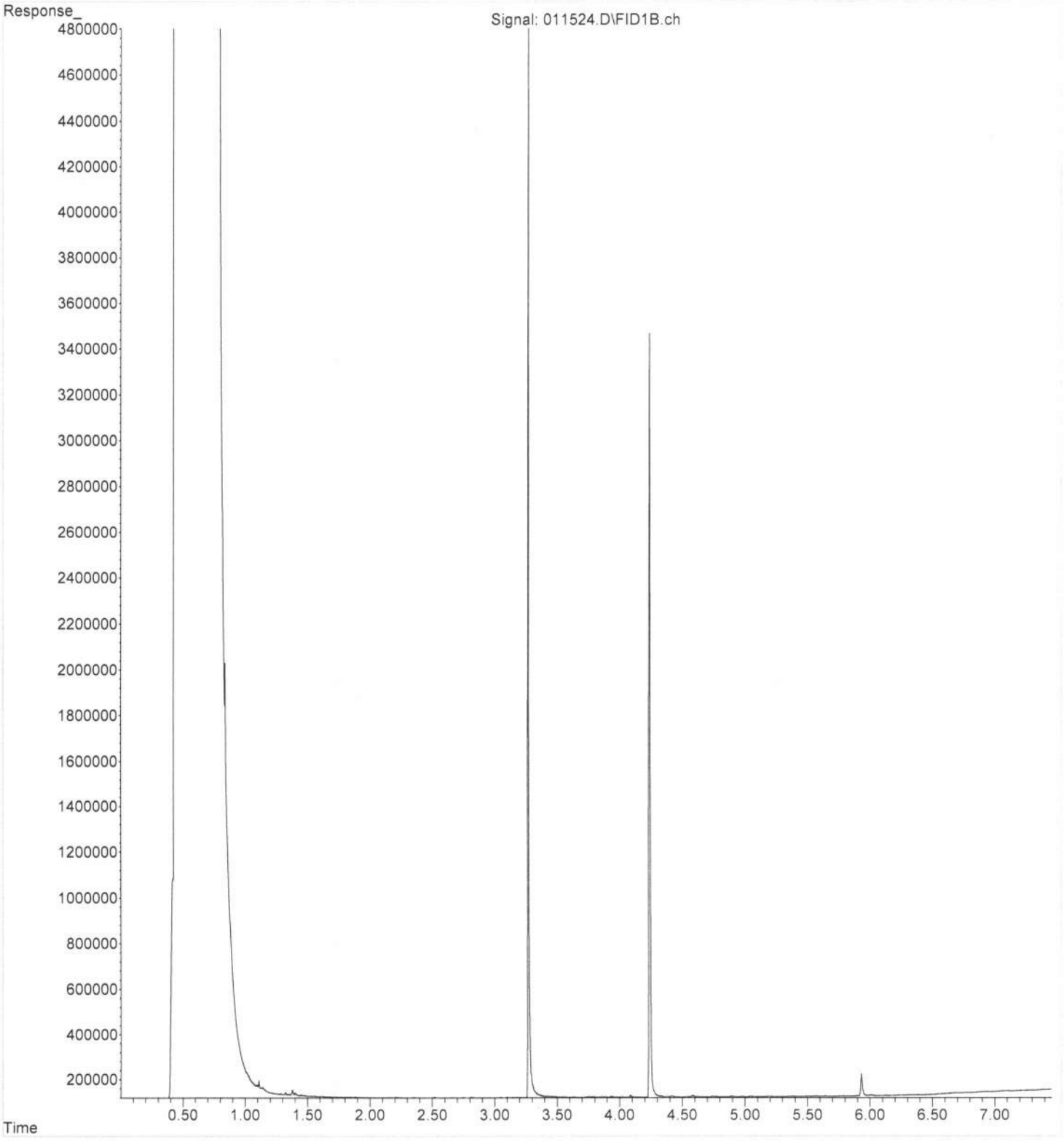


File   :P:\Proc_GC13\01-15-24\011523.D
Operator   : TL
Acquired   : 15 Jan 2024 04:05 pm using AcqMethod Dx.M
Instrument :   GC13
Sample Name: 401150-04
Misc Info :
Vial Number: 20

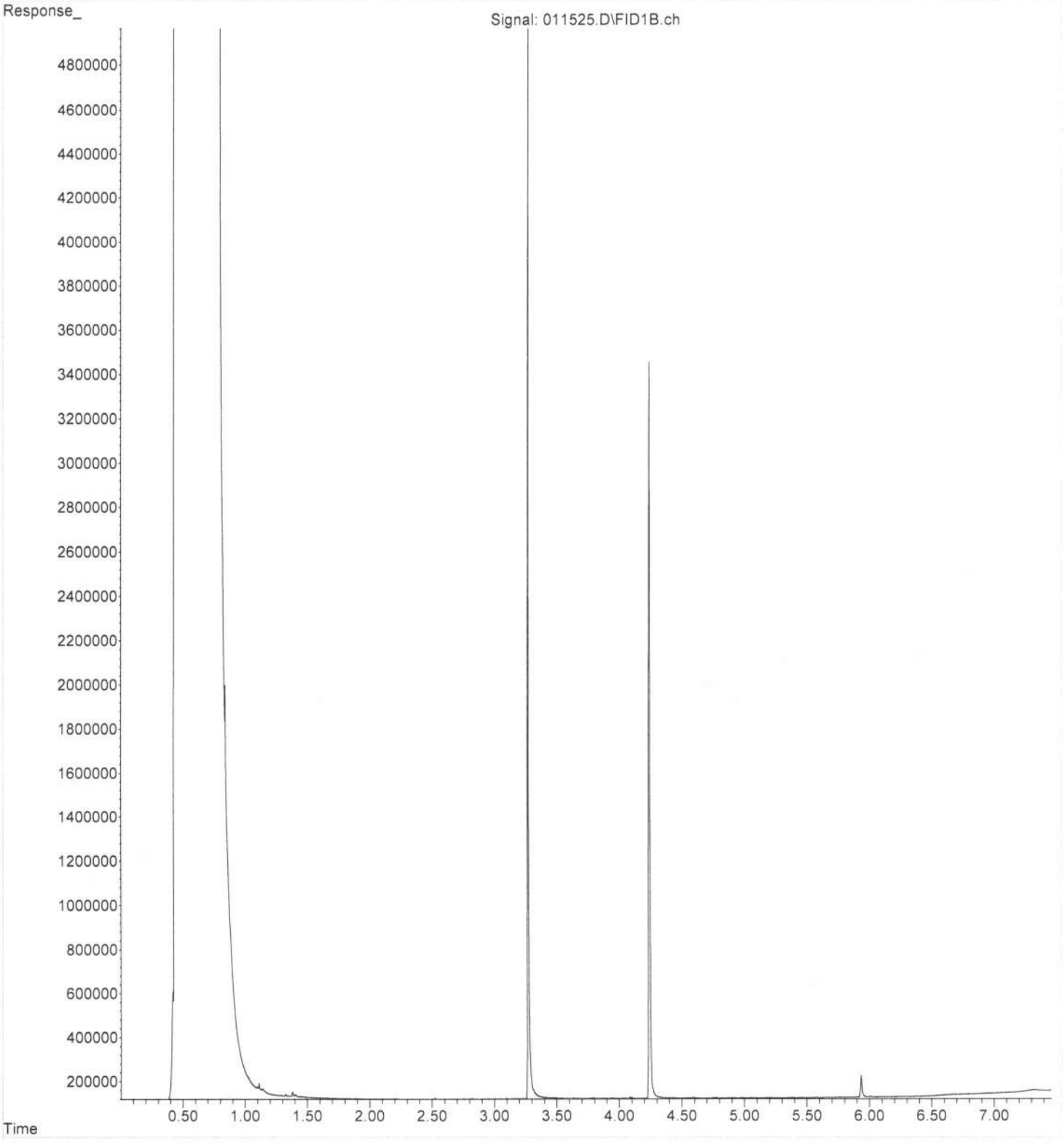
ERR



File :P:\Proc_GC13\01-15-24\011524.D
Operator : TL
Acquired : 15 Jan 2024 04:16 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-05
Misc Info : 8 Jan 16 ERR
Vial Number: 21



File :P:\Proc_GC13\01-15-24\011525.D
Operator : TL
Acquired : 15 Jan 2024 04:27 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-06
Misc Info : 8 J 01.16 ERR
Vial Number: 22



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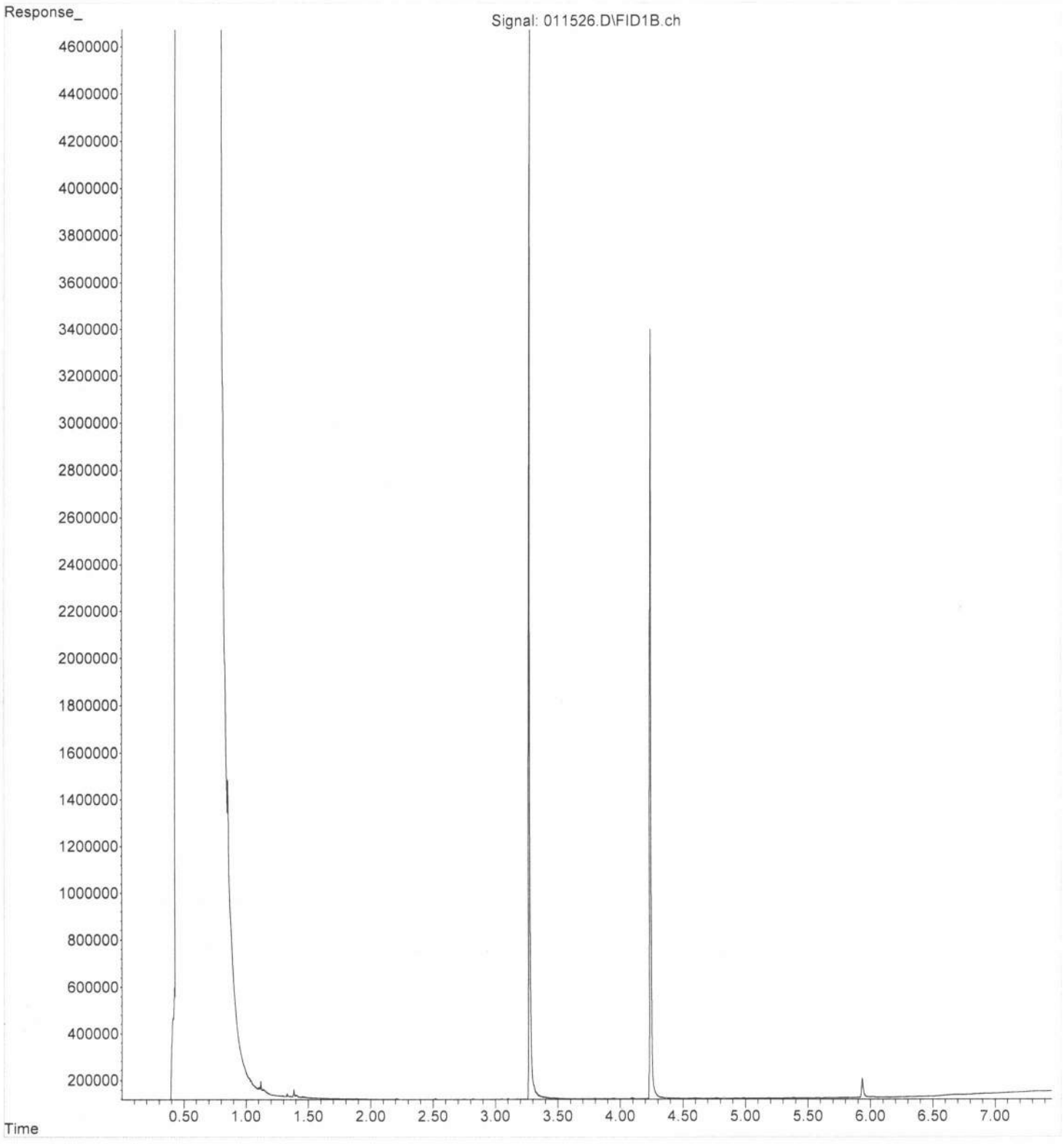
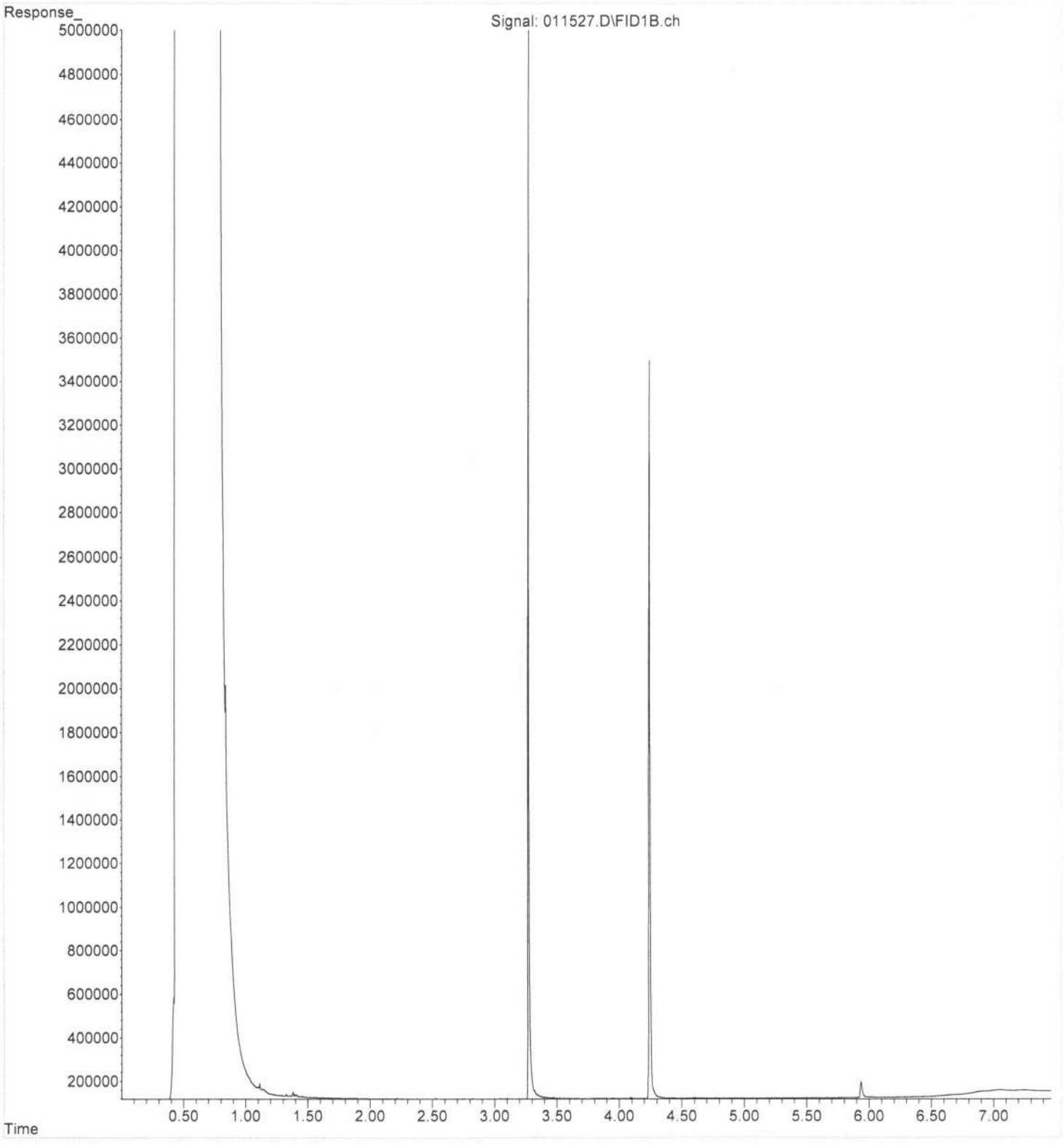
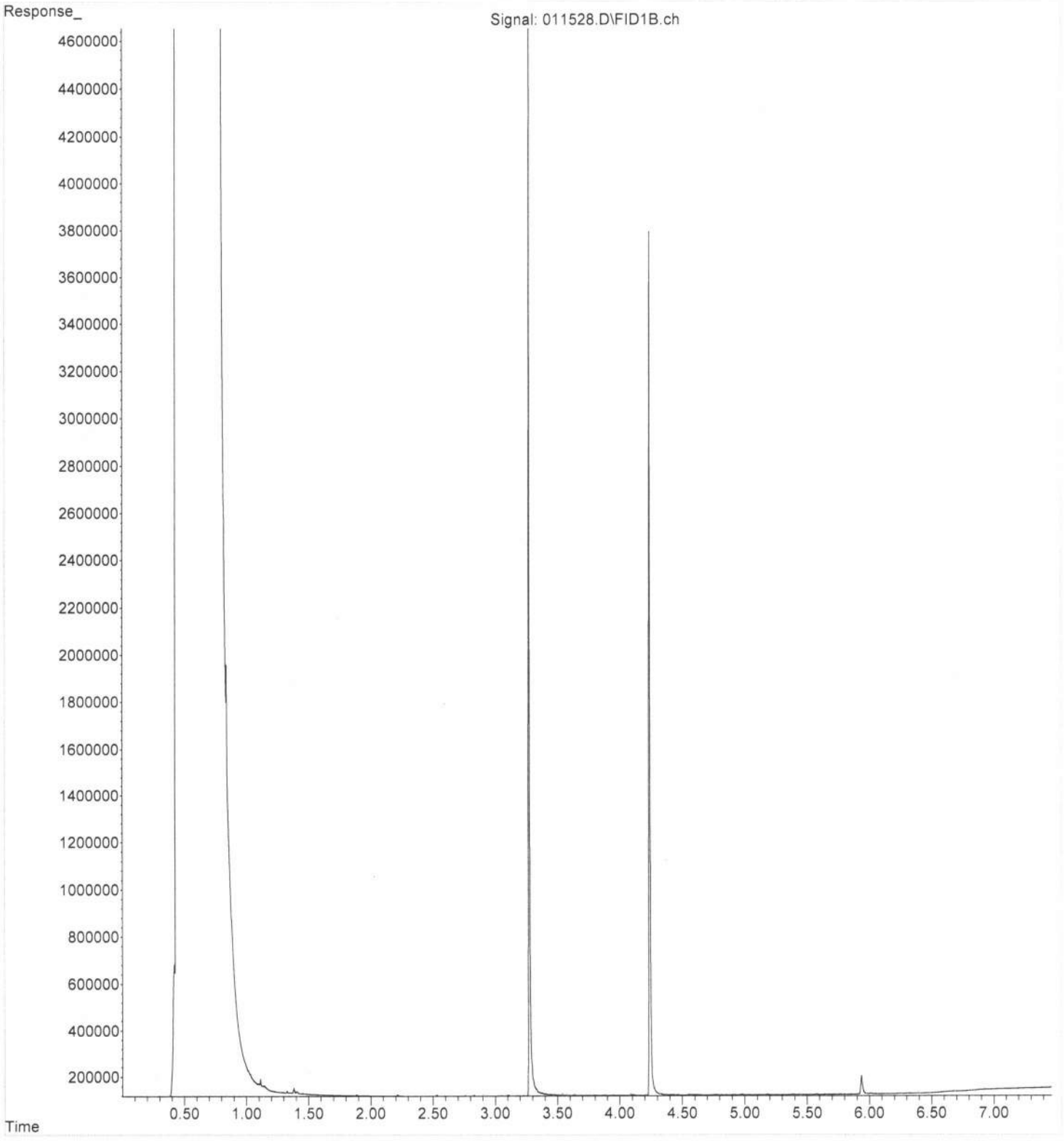
Operator : TL
Acquired : 15 Jan 2024 04:38 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-08
Misc Info : 8 Jan 16 ERR
Vial Number: 23



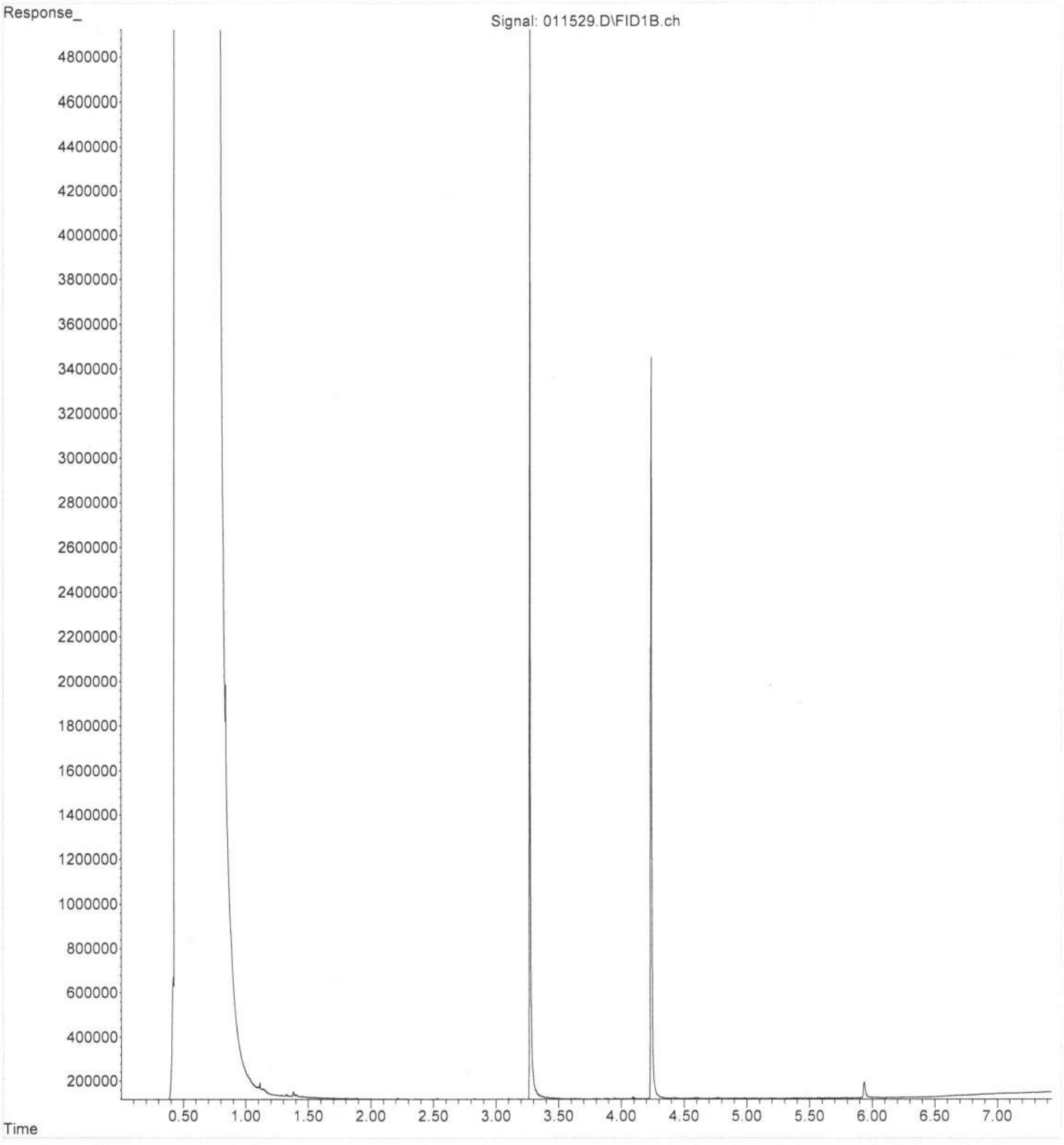
File :P:\Proc_GC13\01-15-24\011527.D
Operator : TL
Acquired : 15 Jan 2024 04:49 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-09
Misc Info : 8 Jan 01-16 ERR
Vial Number: 24



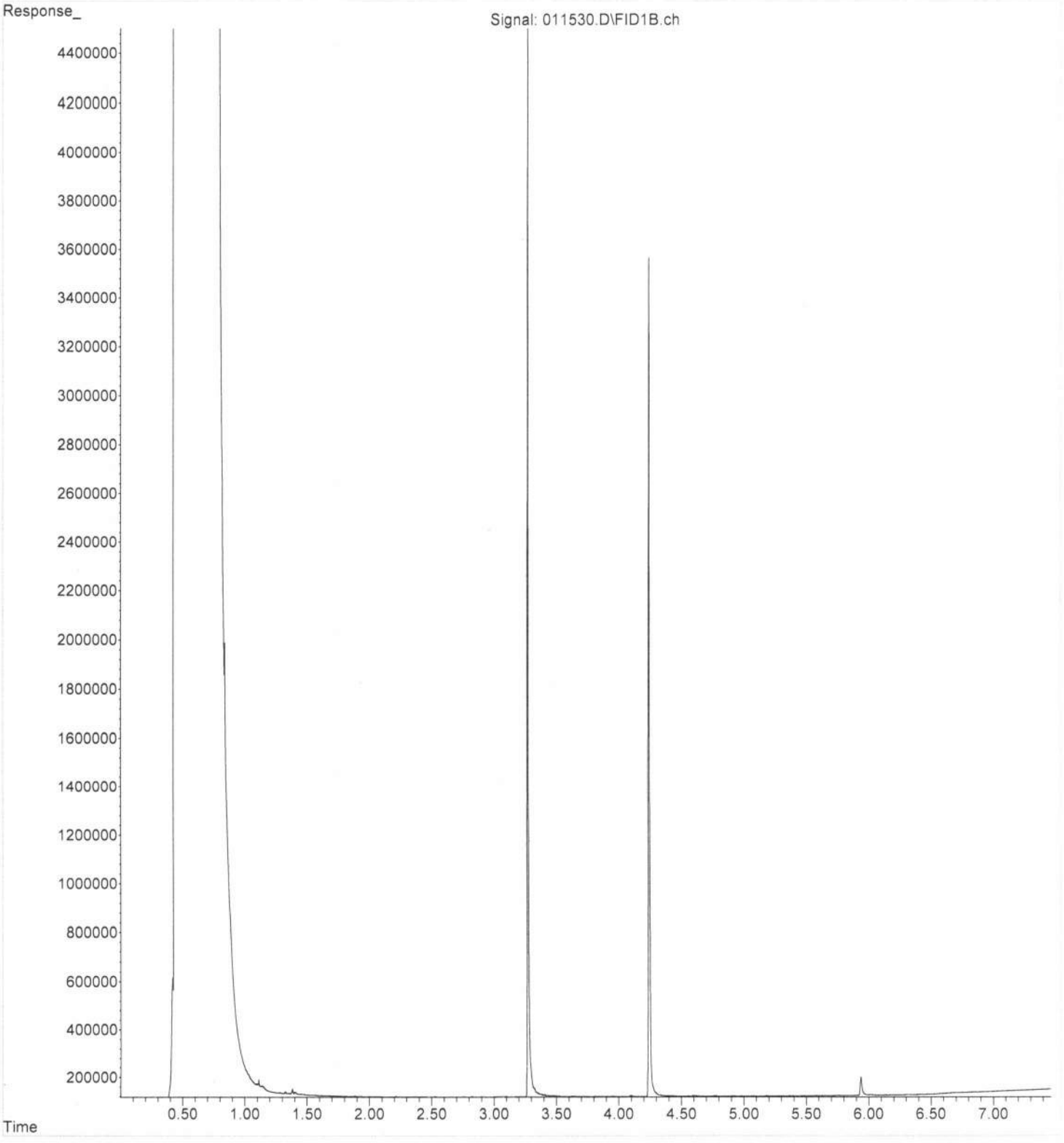
File :P:\Proc_GC13\01-15-24\011528.D
Operator : TL
Acquired : 15 Jan 2024 05:01 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401160-10
Misc Info : 87.01.15 ERR
Vial Number: 25



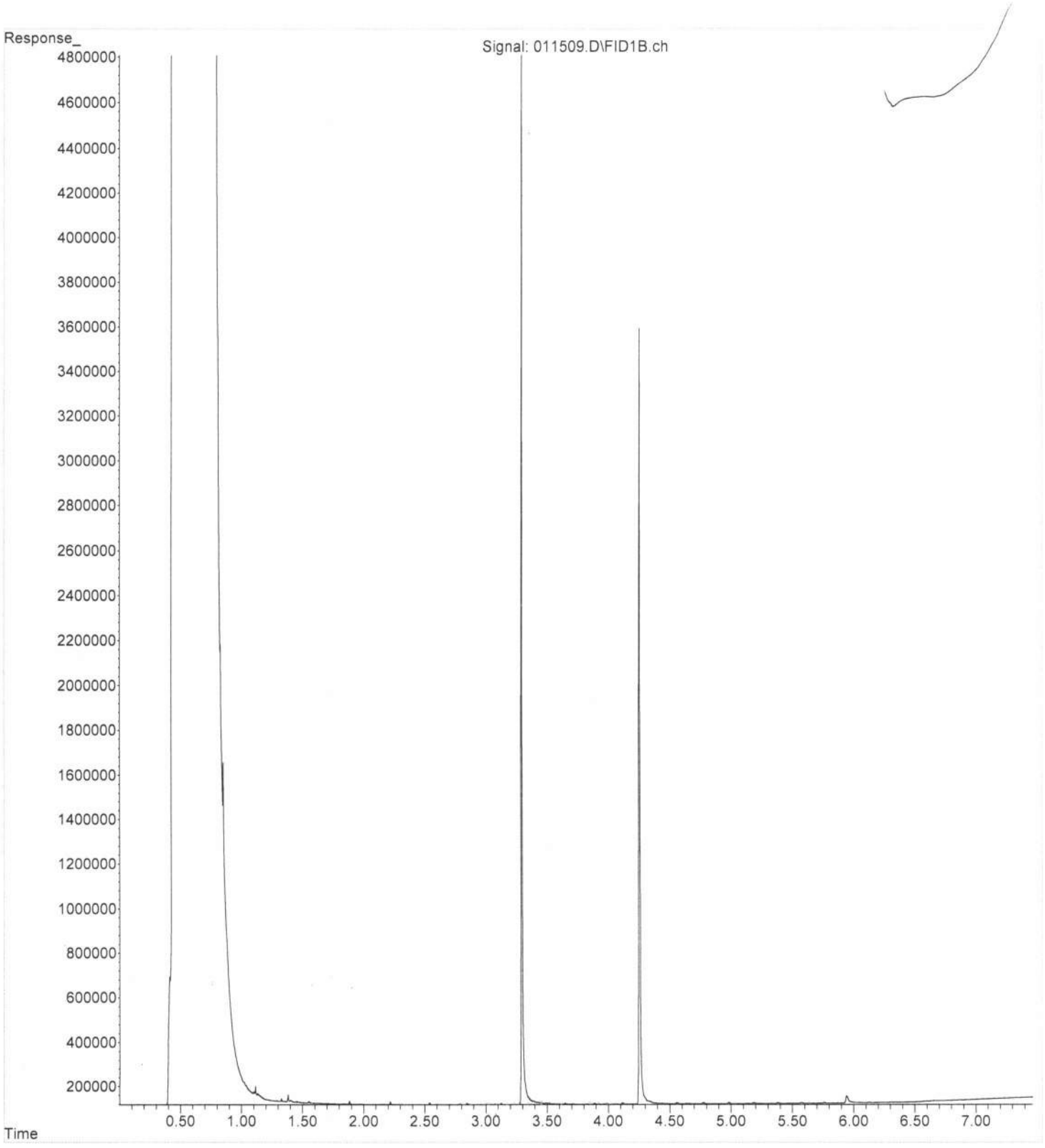
File :P:\Proc_GC13\01-15-24\011529.D
Operator : TL
Acquired : 15 Jan 2024 05:12 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401180-11
Misc Info : 8 Jan 16 ERR
Vial Number: 26



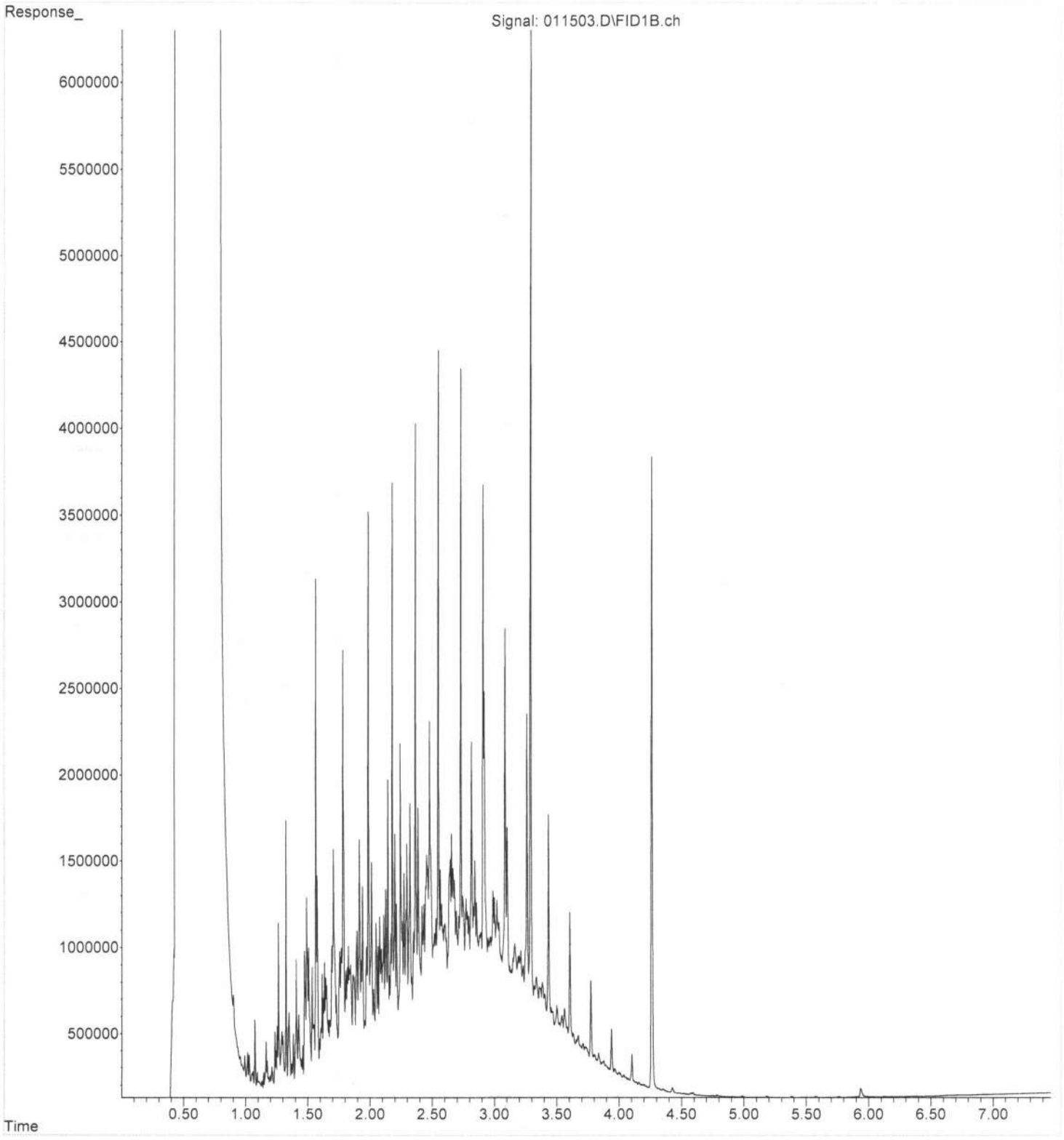
File :P:\Proc_GC13\01-15-24\011530.D
Operator : TL
Acquired : 15 Jan 2024 05:23 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-12
Misc Info : 8 of 16 ERR
Vial Number: 27



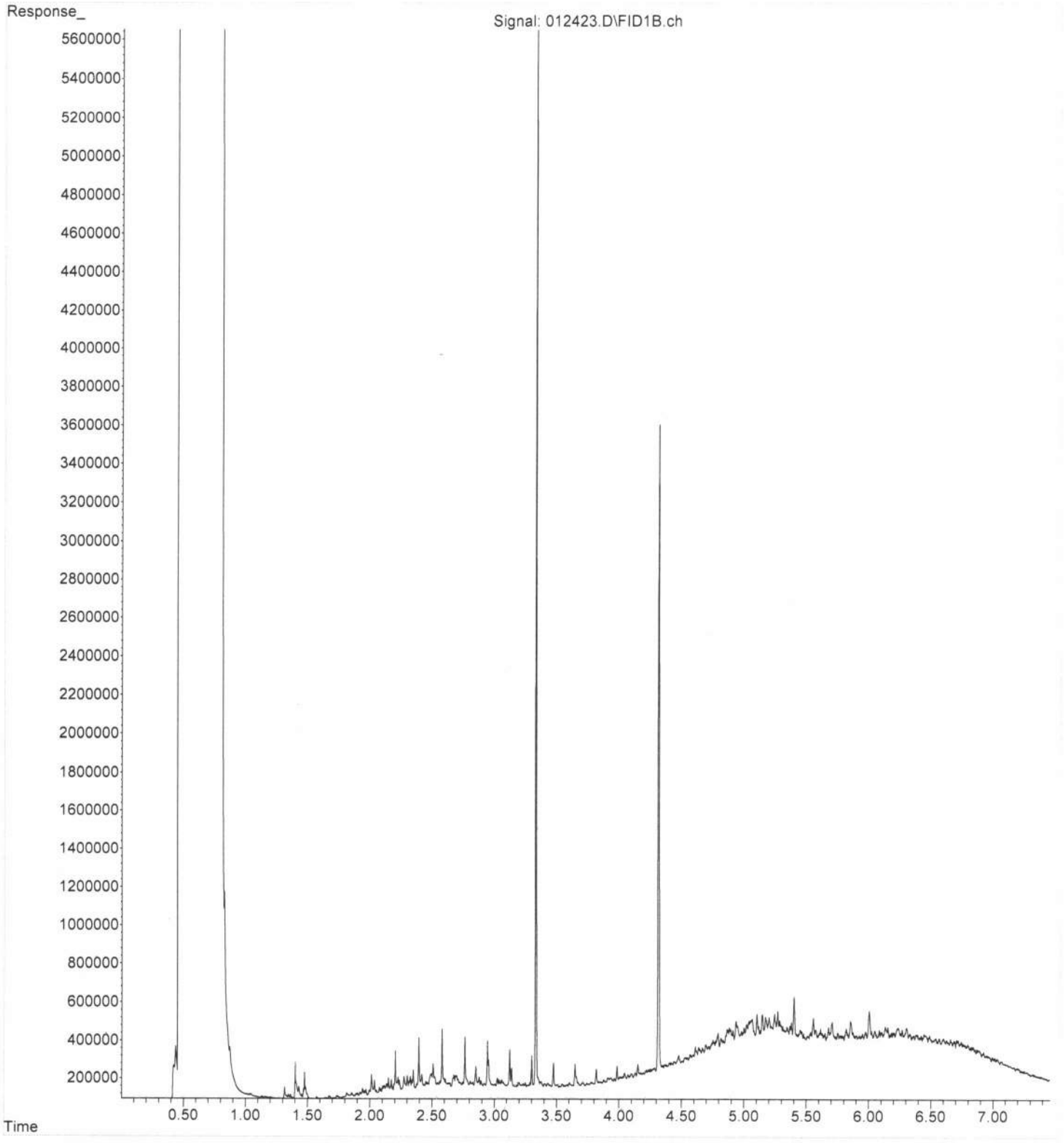
File :P:\Proc_GC13\01-15-24\011509.D
Operator : TL
Acquired : 15 Jan 2024 09:34 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-145 mb
Misc Info : ERR
Vial Number: 11



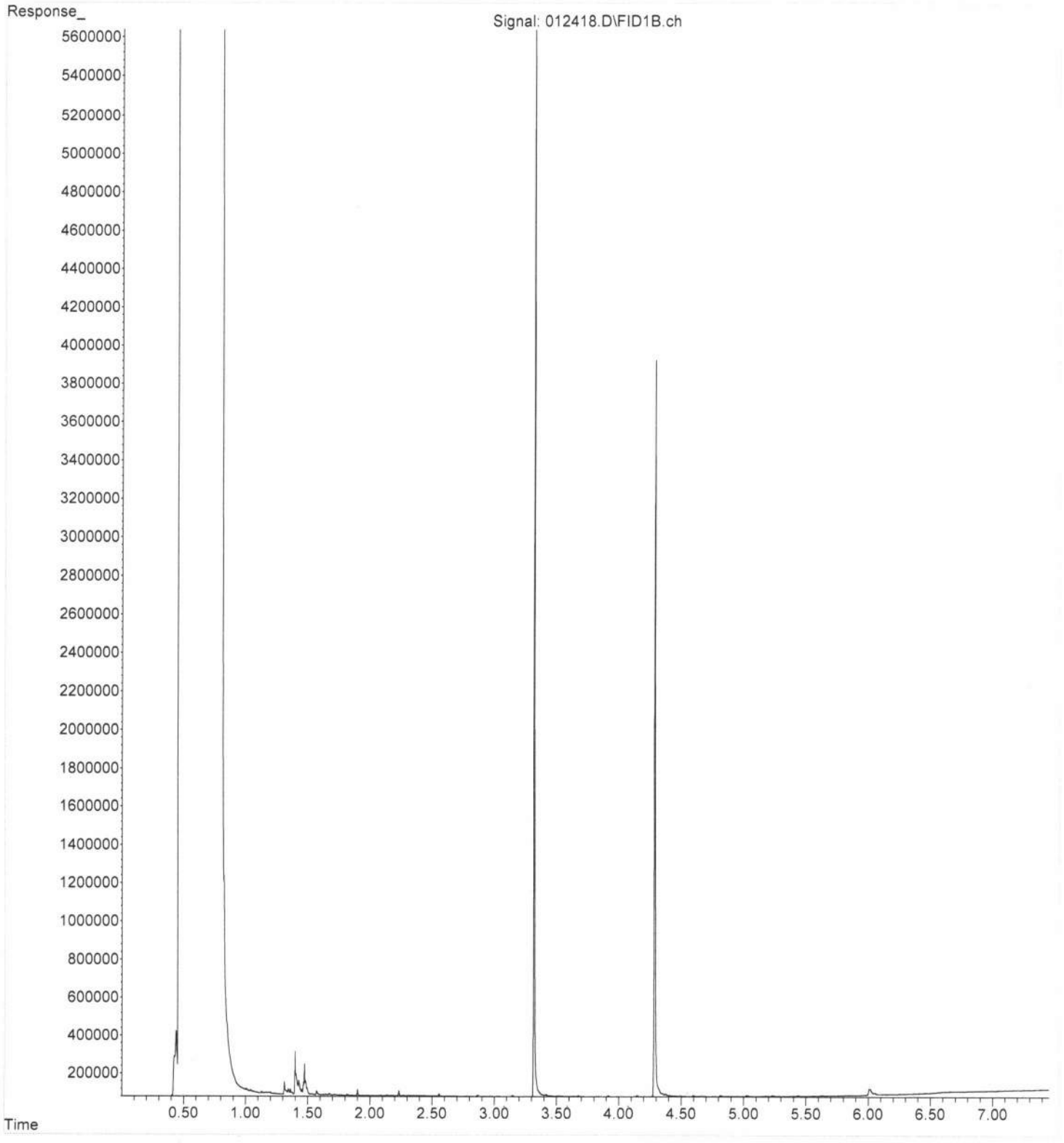
File :P:\Proc_GC13\01-15-24\011503.D
Operator : TL
Acquired : 15 Jan 2024 07:48 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info : ERR
Vial Number: 3



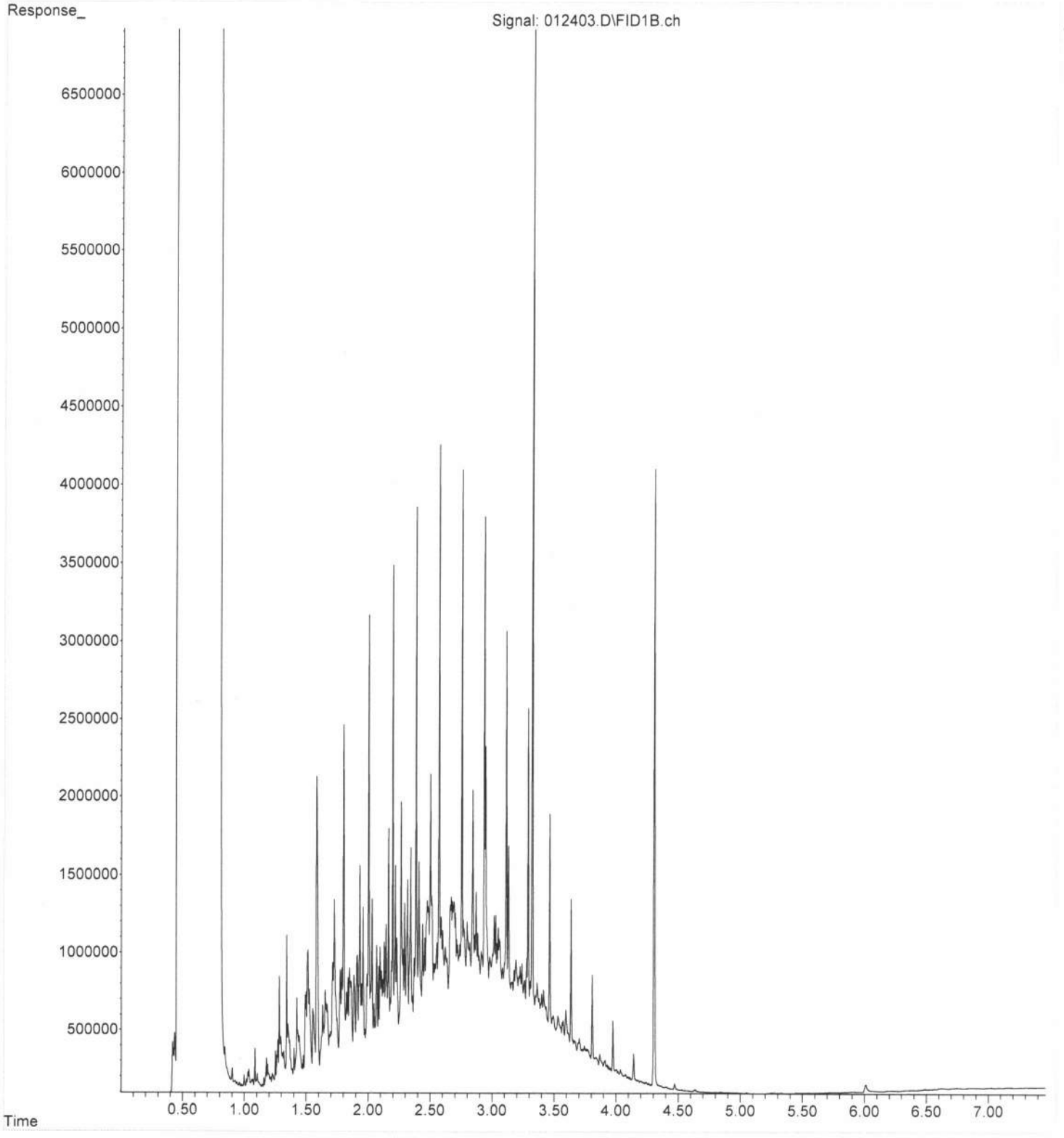
File :P:\Proc_GC10\01-24-24\012423.D
Operator : IJL
Acquired : 24 Jan 2024 03:50 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 401180-02 sg
Misc Info :
Vial Number: 21



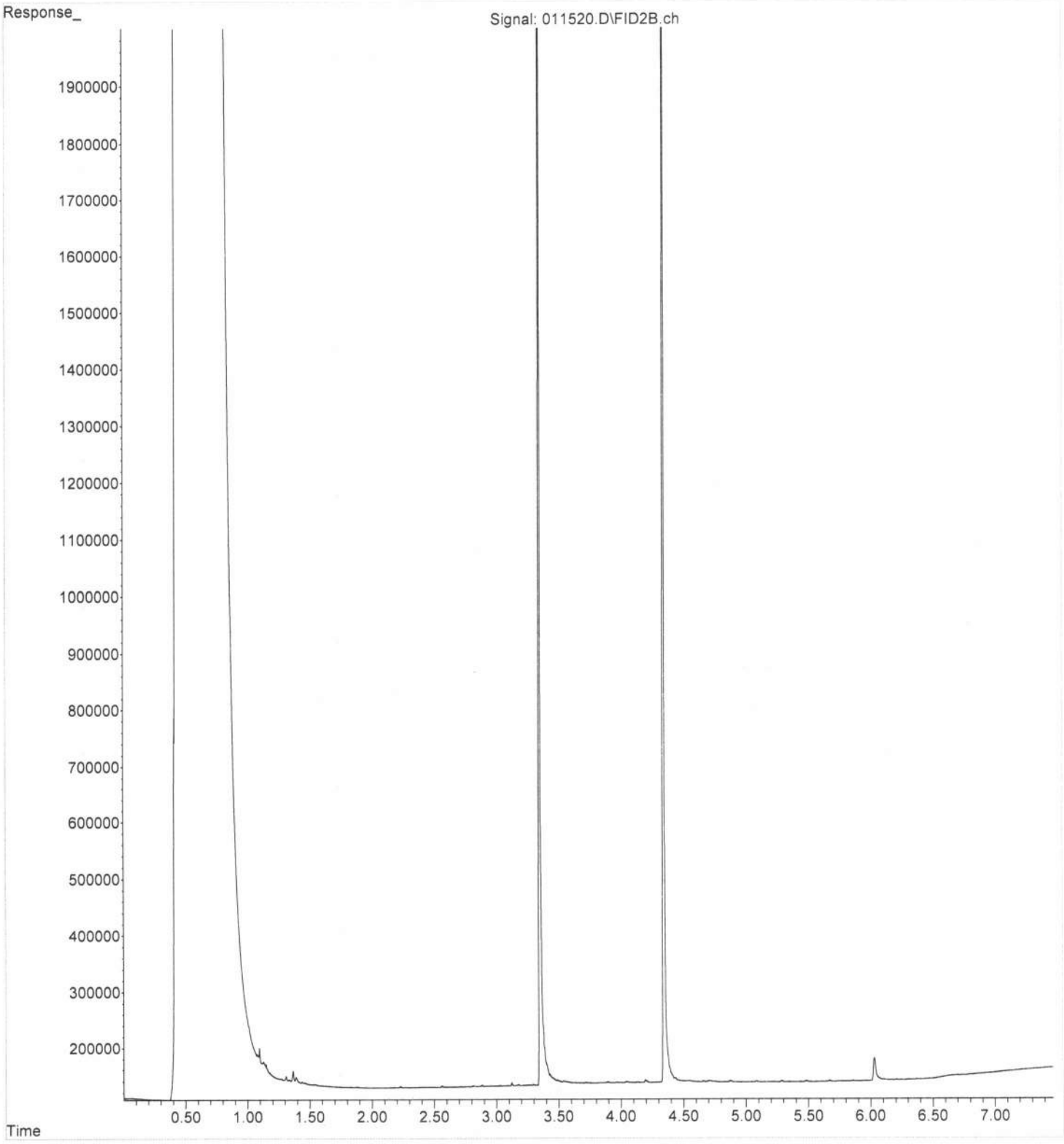
File :P:\Proc_GC10\01-24-24\012418.D
Operator : IJL
Acquired : 24 Jan 2024 02:52 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 04-145 mb sg
Misc Info :
Vial Number: 16



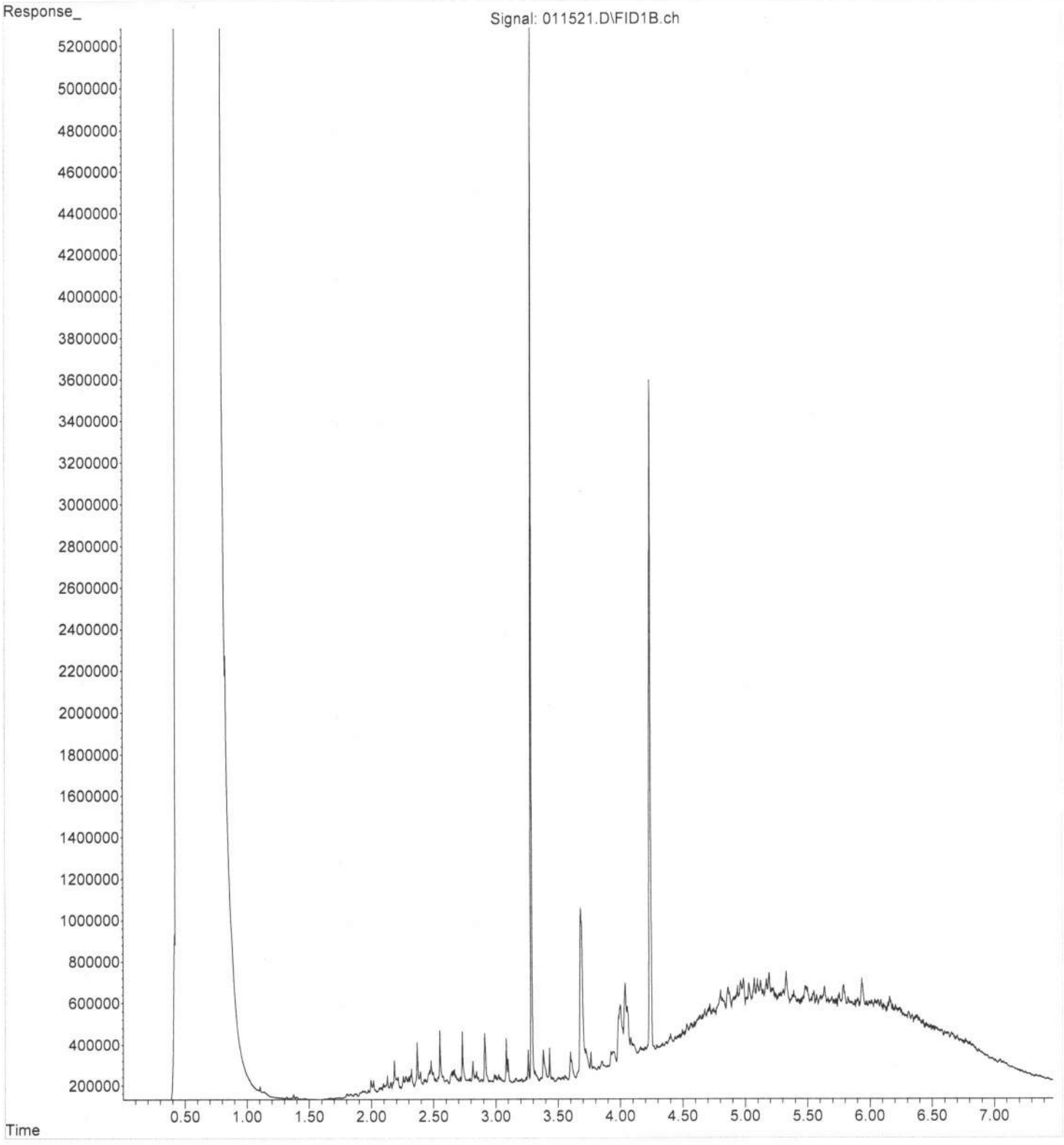
File :P:\Proc_GC10\01-24-24\012403.D
Operator : IJL
Acquired : 24 Jan 2024 08:06 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 500 DX 70-26F
Misc Info :
Vial Number: 3



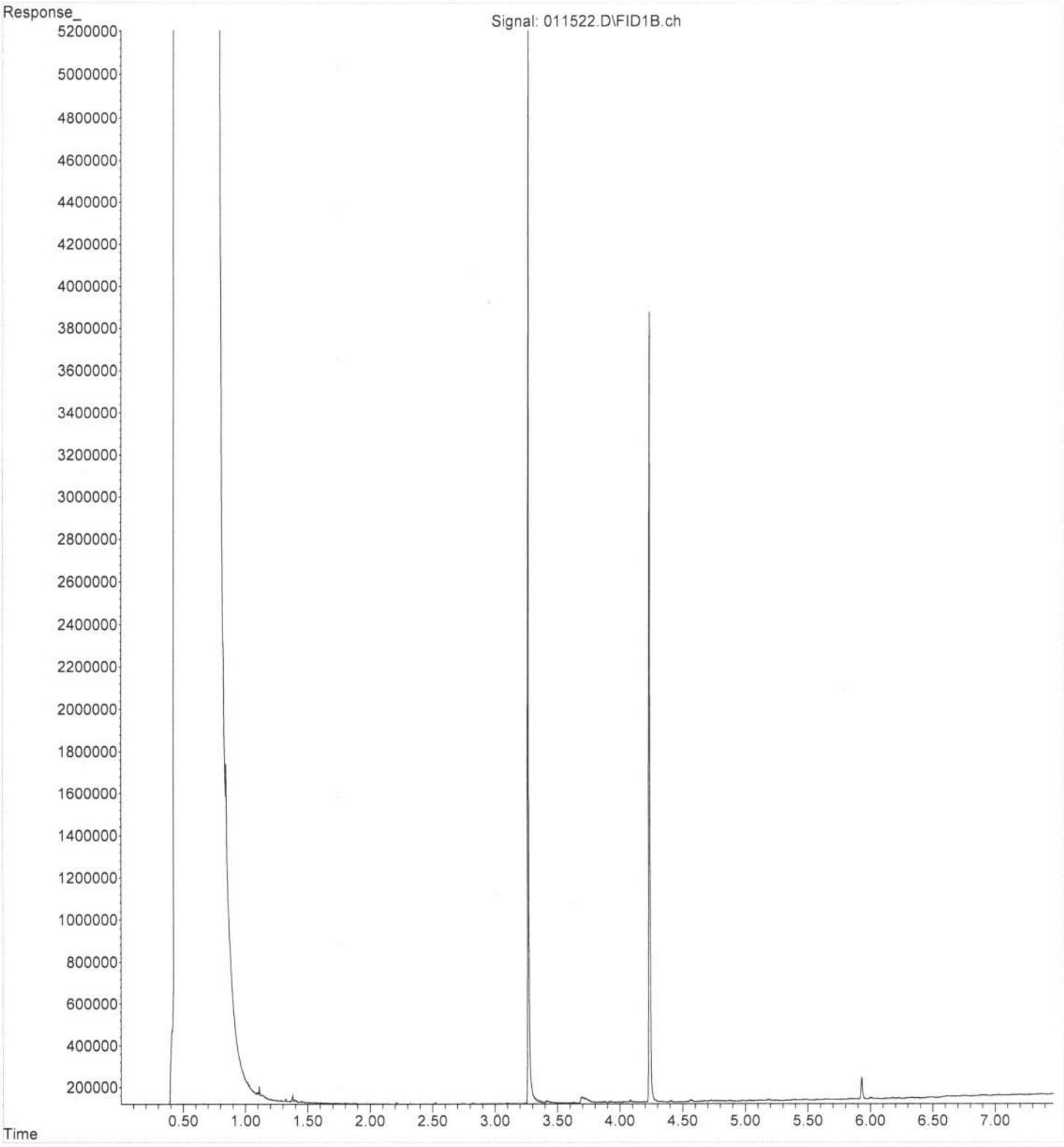
File :P:\Proc_GC13\01-15-24\011520.D
Operator : TL
Acquired : 15 Jan 2024 03:32 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401160-01
Misc Info : 87.01.16 ERR
Vial Number: 17



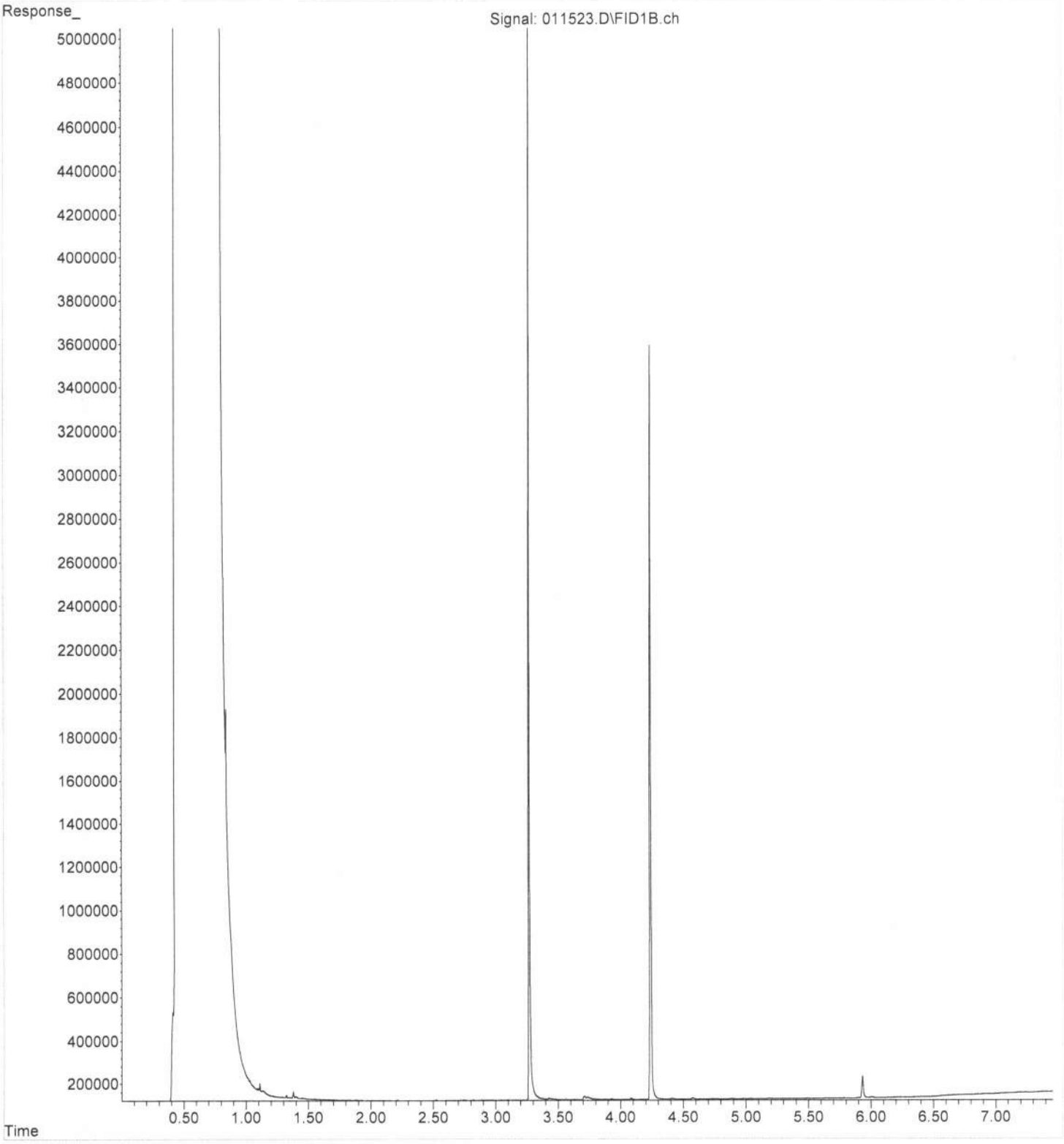
File :P:\Proc_GC13\01-15-24\011521.D
Operator : TL
Acquired : 15 Jan 2024 03:43 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-02
Misc Info : 8301.16 ERR
Vial Number: 18



File :P:\Proc_GC13\01-15-24\011522.D
Operator : TL
Acquired : 15 Jan 2024 03:54 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401130-03
Misc Info : 8 Jan 16 ERR
Vial Number: 19

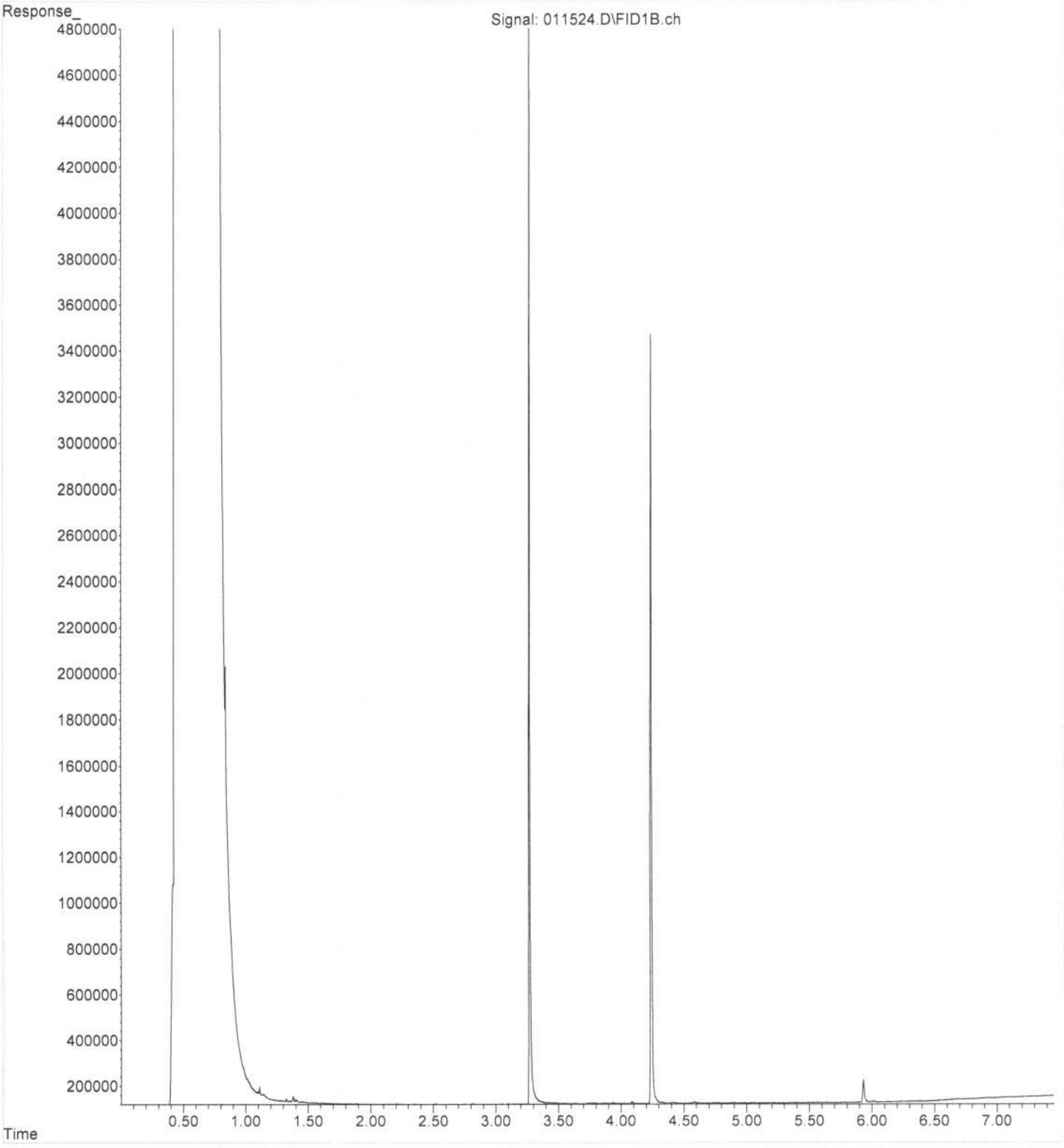


File : P:\Proc_GC13\01-15-24\011523.D
Operator : TL
Acquired : 15 Jan 2024 04:05 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-04
Misc Info : & Tech6 ERR
Vial Number: 20

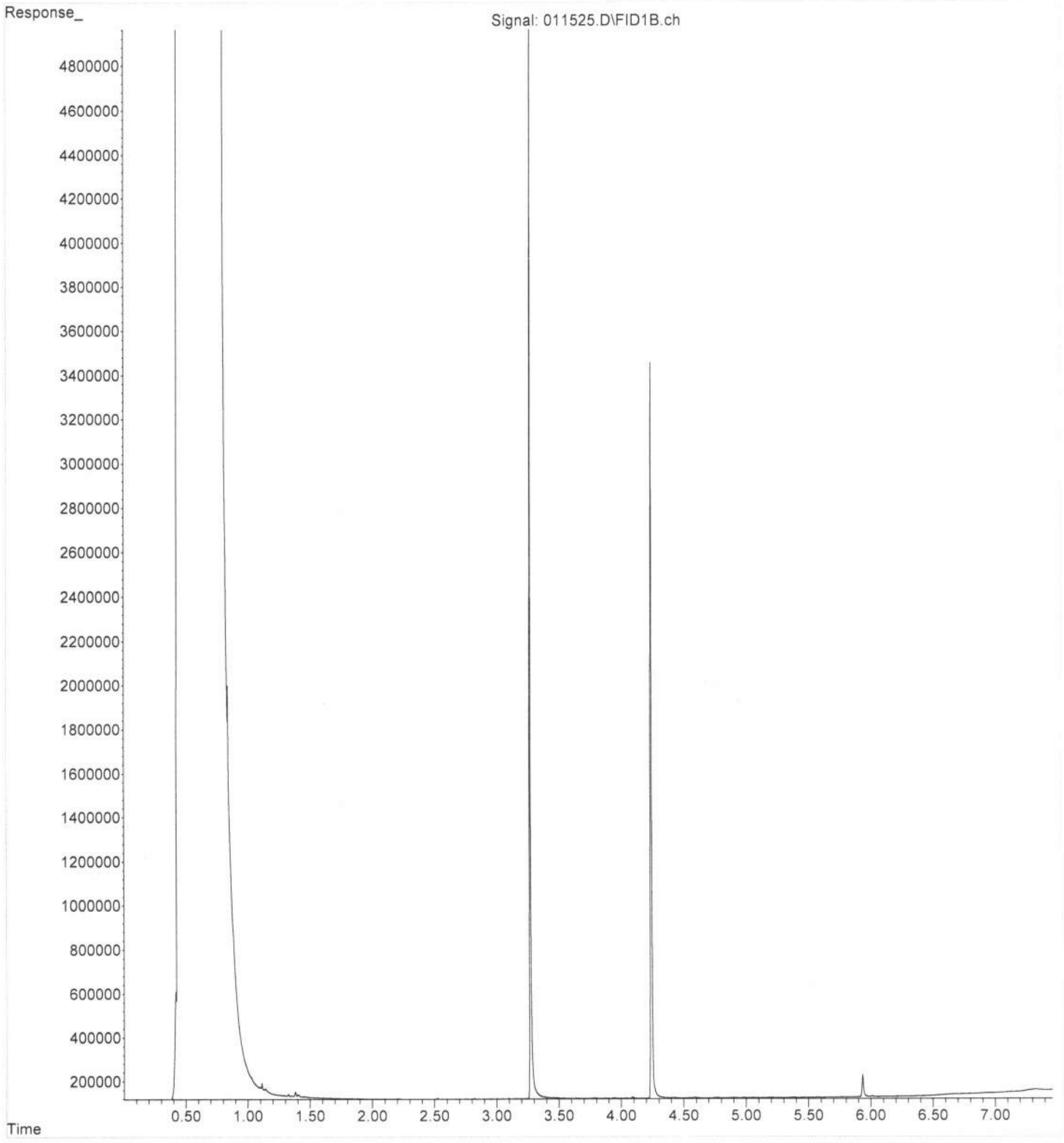


File :P:\Proc_GC13\01-15-24\011524.D
Operator : TL
Acquired : 15 Jan 2024 04:16 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-05
Misc Info : 8 Jan 16
Vial Number: 21

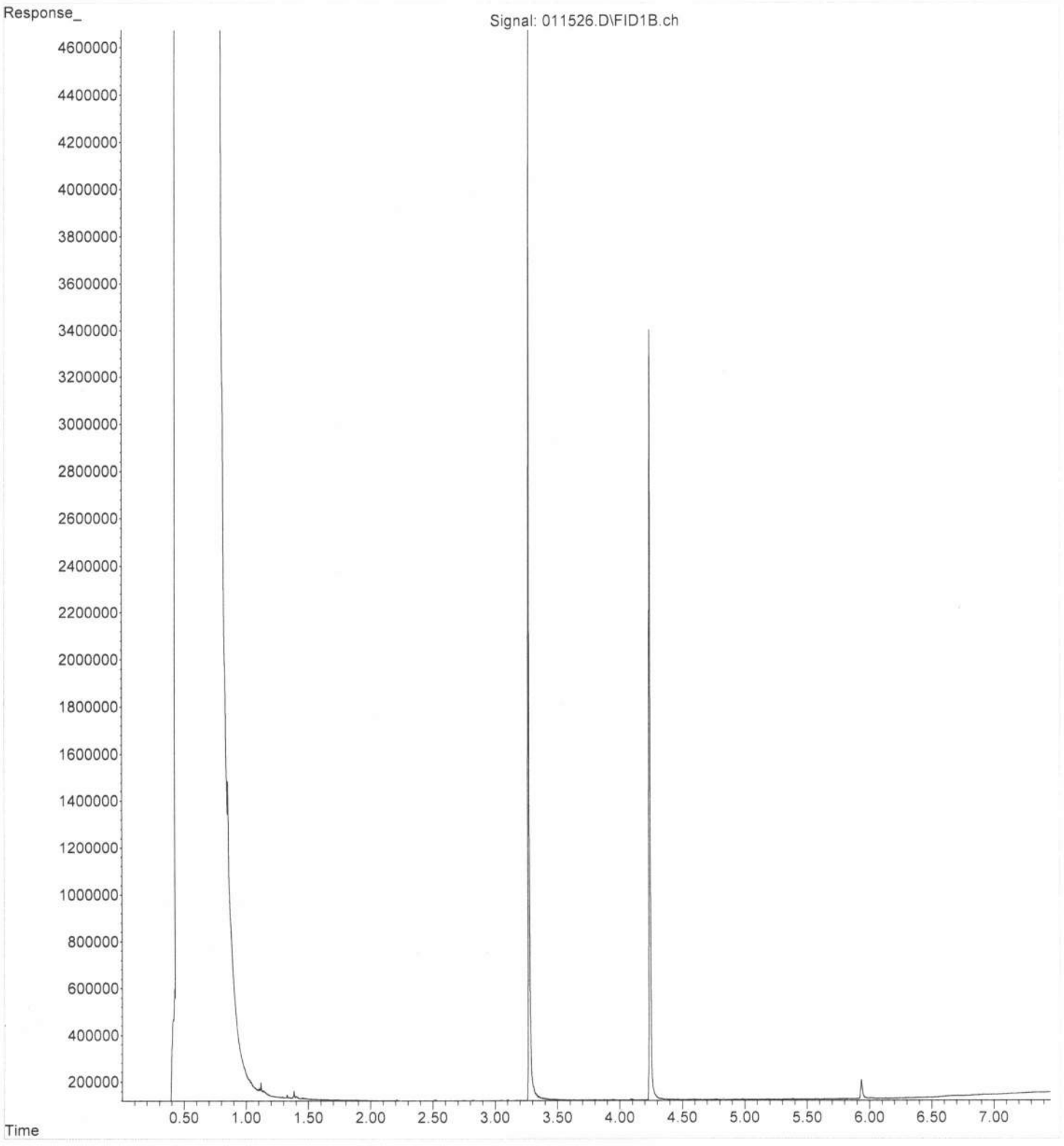
ERR



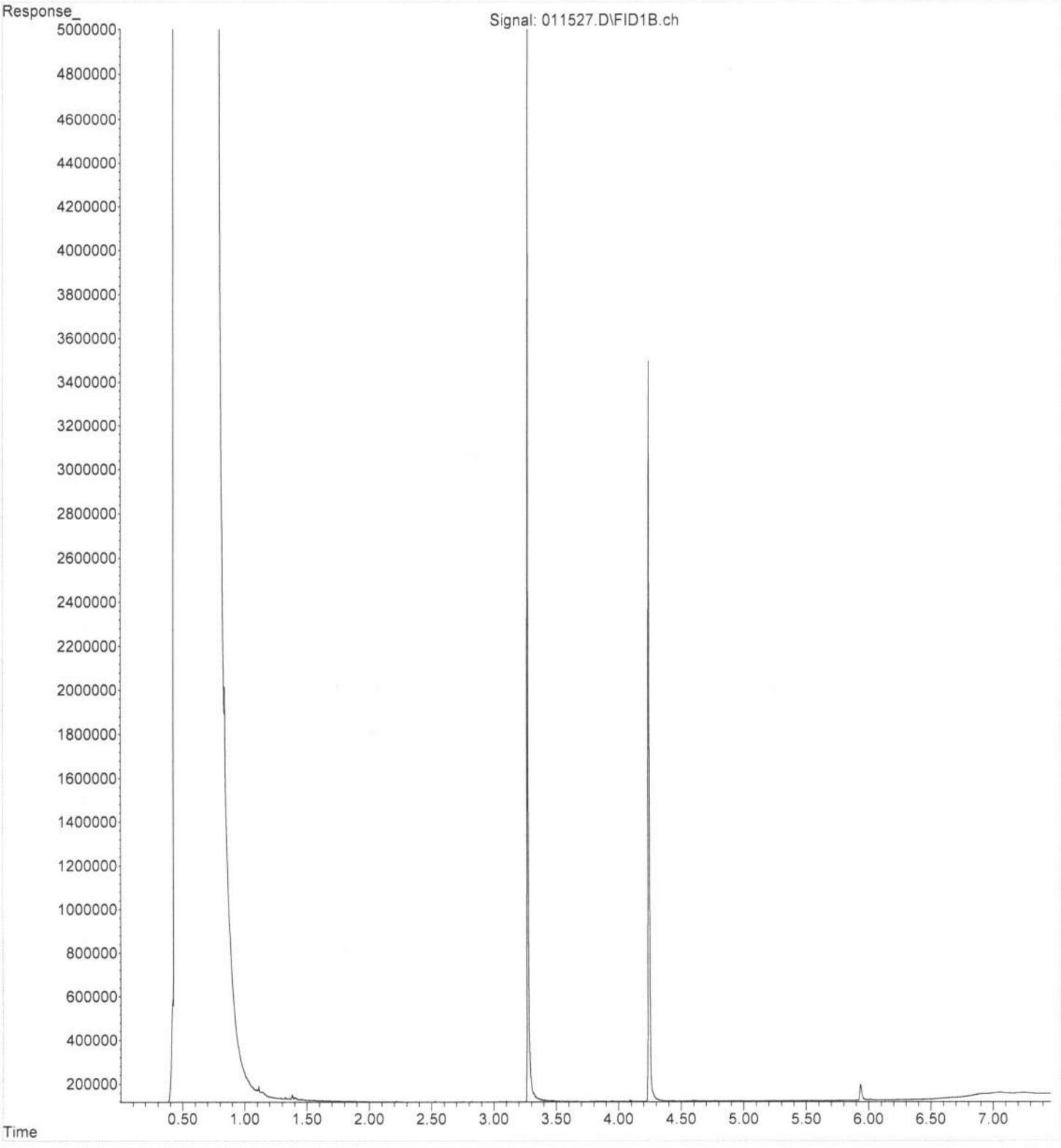
File : P:\Proc_GC13\01-15-24\011525.D
Operator : TL
Acquired : 15 Jan 2024 04:27 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-06
Misc Info : 8 7 01.16 ERR
Vial Number: 22



File :P:\Proc_GC13\01-15-24\011526.D
Operator : TL
Acquired : 15 Jan 2024 04:38 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401170-08
Misc Info : 8 Jan 01.16 ERR
Vial Number: 23

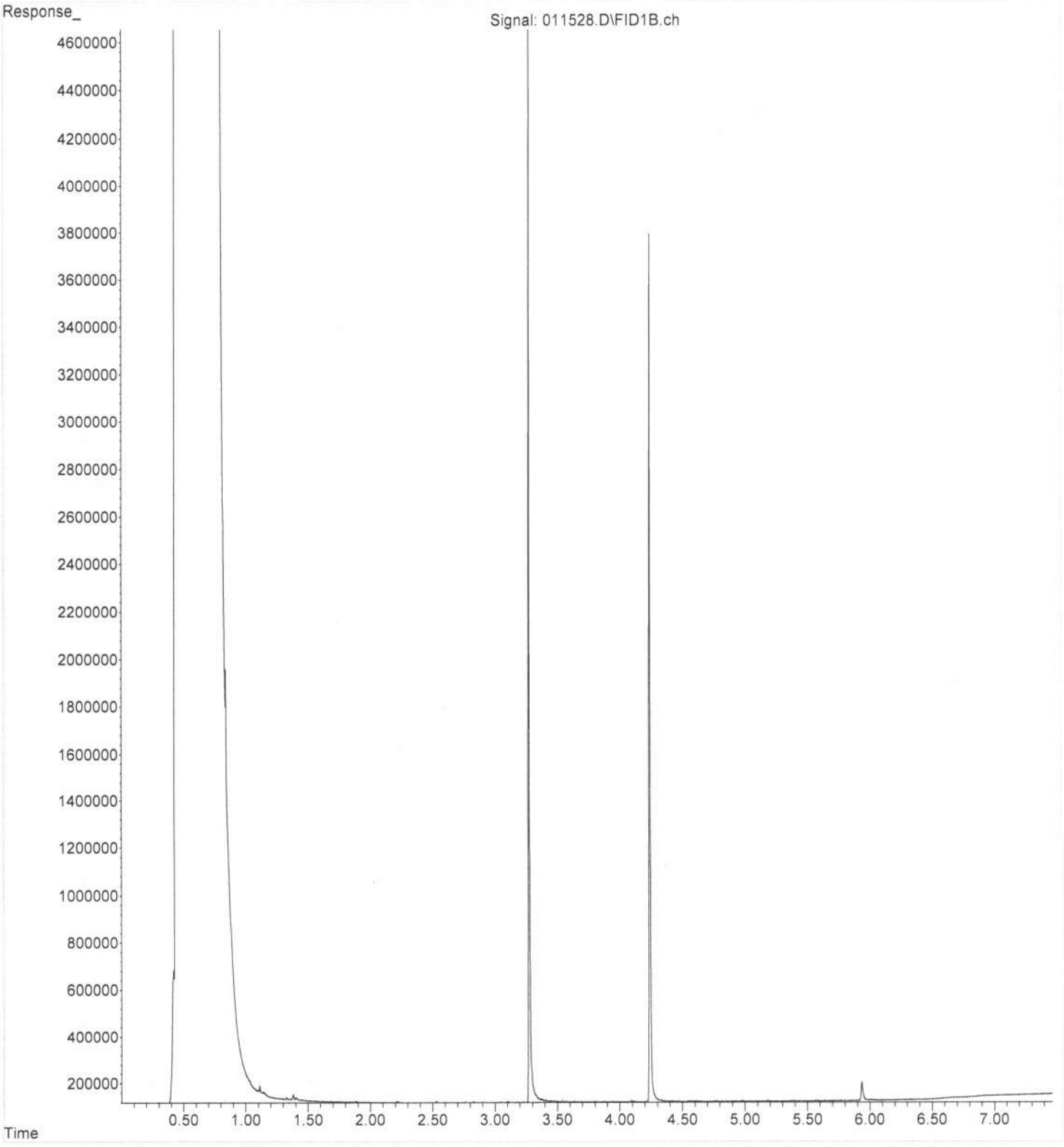


File :P:\Proc_GC13\01-15-24\011527.D
Operator : TL
Acquired : 15 Jan 2024 04:49 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401100-09
Misc Info : 8Feb01-16 ERR
Vial Number: 24



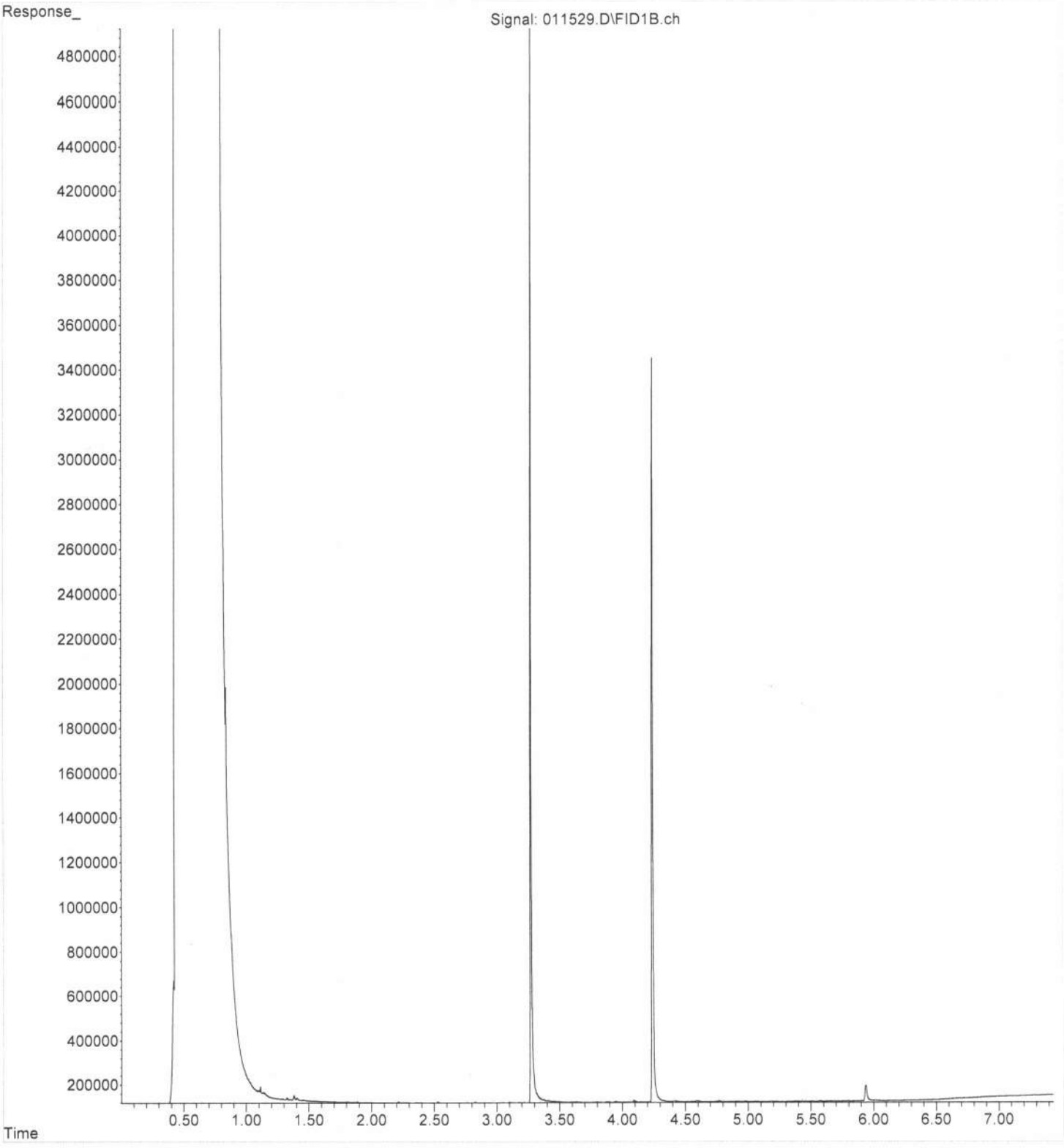
File :P:\Proc_GC13\01-15-24\011528.D
Operator : TL
Acquired : 15 Jan 2024 05:01 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401160-10
Misc Info : 87.01.15
Vial Number: 25

ERR



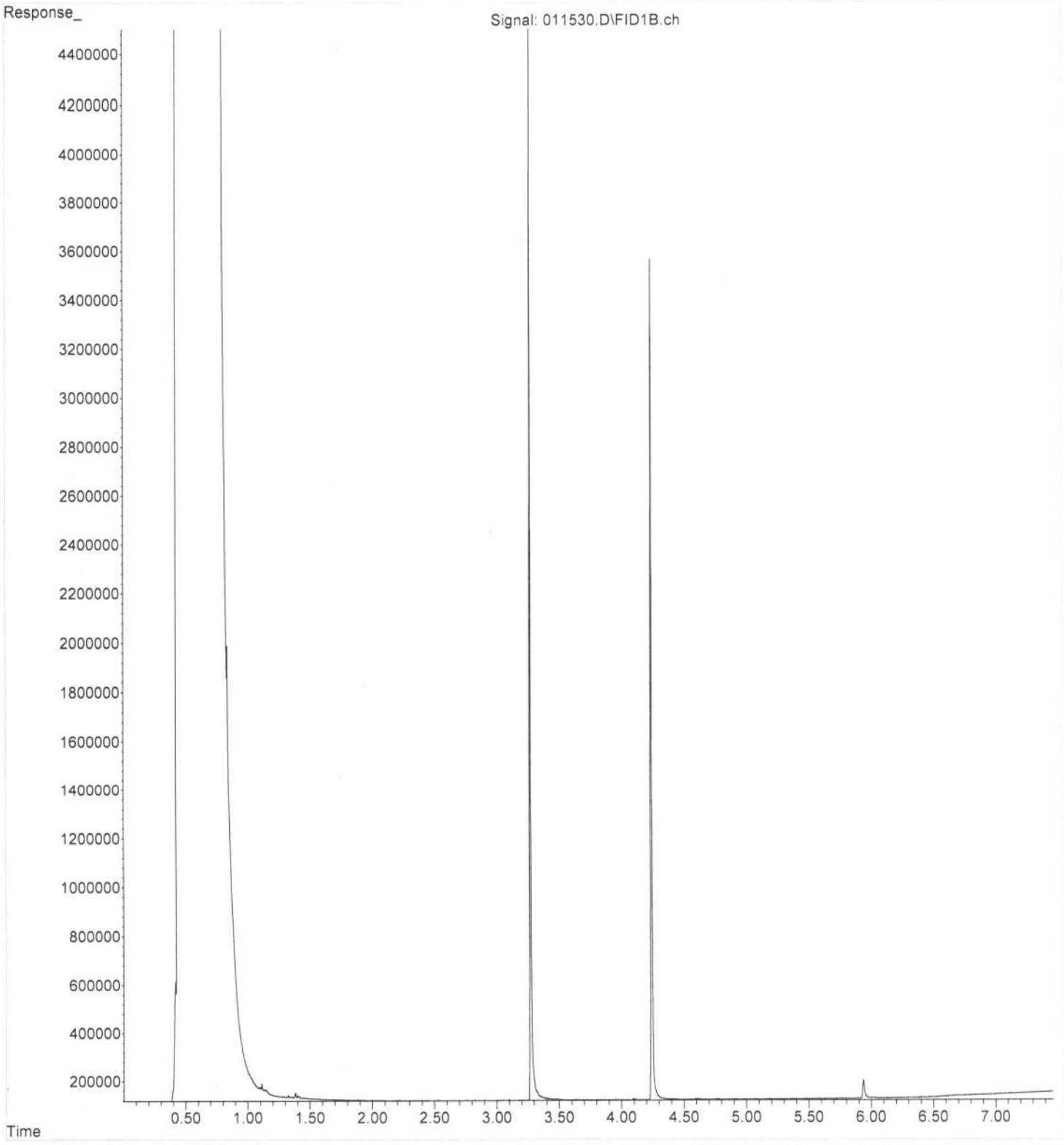
File :P:\Proc_GC13\01-15-24\011529.D
Operator : TL
Acquired : 15 Jan 2024 05:12 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401180-11
Misc Info : 8 J 01.16
Vial Number: 26

ERR



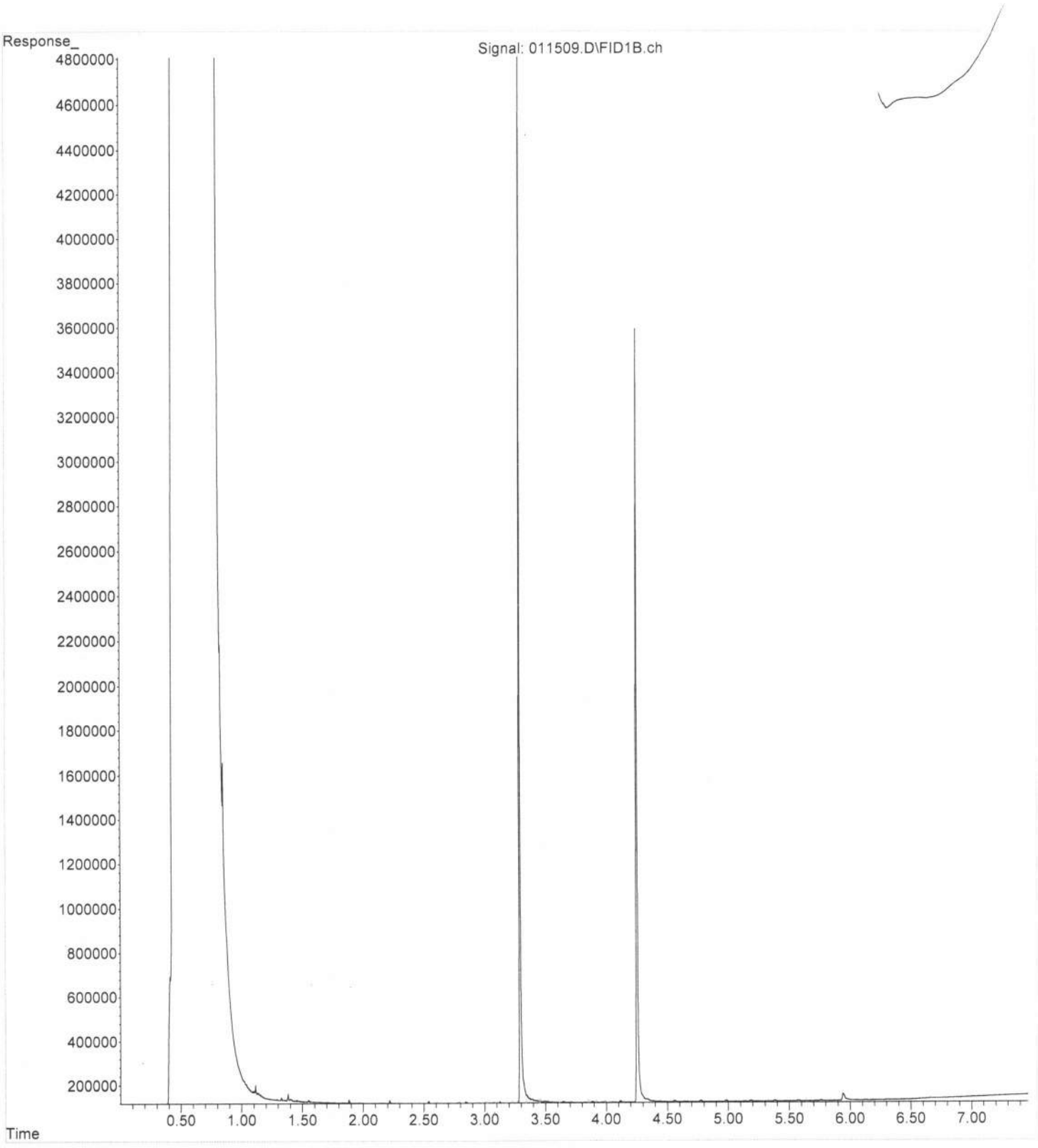
File : P:\Proc_GC13\01-15-24\011530.D
Operator : TL
Acquired : 15 Jan 2024 05:23 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401150-12
Misc Info : 8 of 16
Vial Number: 27

ERR

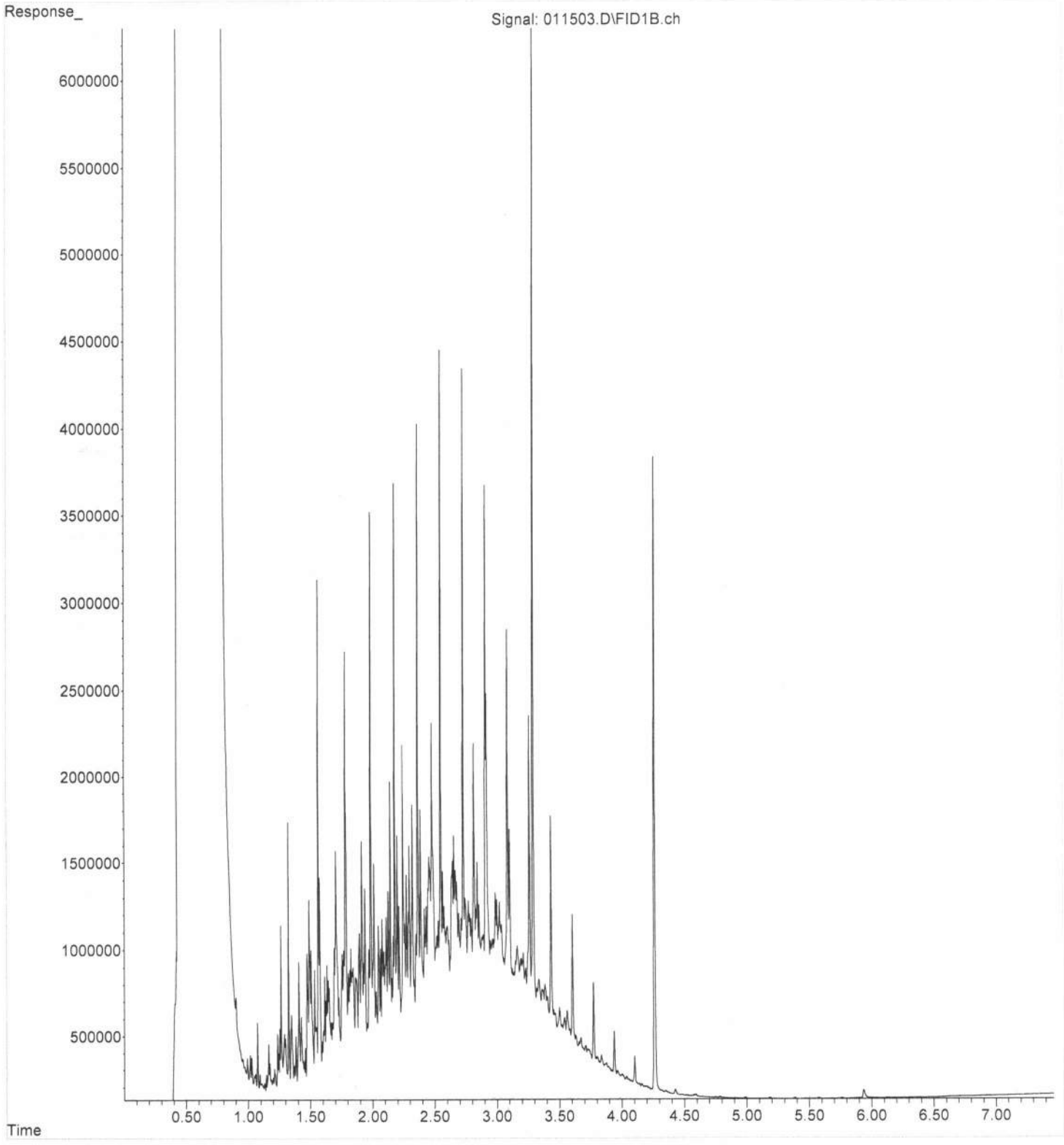


File :P:\Proc_GC13\01-15-24\011509.D
Operator : TL
Acquired : 15 Jan 2024 09:34 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-145 mb
Misc Info :
Vial Number: 11

ERR



File :P:\Proc_GC13\01-15-24\011503.D
Operator : TL
Acquired : 15 Jan 2024 07:48 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401180
Work Order Number: 2401315

January 31, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 1/17/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/31/2024*

CLIENT: Friedman & Bruya
Project: 401180
Work Order: 2401315

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401315-001	MW-19D-S2	01/10/2024 10:00 AM	01/17/2024 10:53 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2401315**
Date: **1/31/2024**

CLIENT: Friedman & Bruya
Project: 401180

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2401315**
Date Reported: **1/31/2024**

CLIENT: Friedman & Bruya
Project: 401180

Lab ID: 2401315-001 **Collection Date:** 1/10/2024 10:00:00 AM
Client Sample ID: **MW-19D-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42666		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	107	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C10-C12)	ND	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C12-C16)	28.2	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C16-C21)	21.1	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aliphatic Hydrocarbon (C21-C34)	91.3	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C8-C10)	ND	107	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C10-C12)	ND	53.5	D	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C12-C16)	20.0	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C16-C21)	52.0	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Aromatic Hydrocarbon (C21-C34)	41.4	53.5	DJ	mg/Kg-dry	5	1/23/2024 5:29:47 PM
Surr: 1-Chlorooctadecane	50.4	50 - 150	D	%Rec	5	1/23/2024 5:29:47 PM
Surr: o-Terphenyl	67.2	50 - 150	D	%Rec	5	1/23/2024 5:29:47 PM

NOTES:
Diluted due to matrix.

Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42713		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C6-C8)	0.460	0.997	J	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aliphatic Hydrocarbon (C10-C12)	1.52	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aliphatic Hydrocarbon (C10-C12)	2.13	0.997	Q+	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C8-C10)	0.831	0.997	Q-J	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C8-C10)	0.187	0.997	JH	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C10-C12)	1.29	0.997	Q-	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Aromatic Hydrocarbon (C10-C12)	1.44	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C12-C13)	1.44	0.997	H	mg/Kg-dry	1	1/26/2024 1:23:00 PM
Aromatic Hydrocarbon (C12-C13)	1.22	0.997	Q-	mg/Kg-dry	1	1/24/2024 8:00:00 PM
Surr: 2,5-dibromotoluene	83.8	60 - 140	H	%Rec	1	1/26/2024 1:23:00 PM
Surr: 2,5-dibromotoluene	67.3	60 - 140		%Rec	1	1/24/2024 8:00:00 PM

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample Moisture (Percent Moisture)				Batch ID: R89073		Analyst: ZD
Percent Moisture	7.55	0.500		wt%	1	1/18/2024 8:20:25 AM

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42666**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **MBLKS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863392**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	50.9		100.0		50.9	50	150				

Sample ID: **MB-42666**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **MBLKS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863399**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	72.1		100.0		72.1	50	150				

Sample ID: **LCS-42666**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **LCSS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863393**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	107	20.0	250.0	0	42.6	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	67.1	10.0	125.0	0	53.7	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	67.7	10.0	125.0	0	54.2	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	67.4	10.0	125.0	0	53.9	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	83.9	10.0	125.0	0	67.1	36.6	144				
Surr: 1-Chlorooctadecane	55.4		100.0		55.4	50	150				

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42666**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **LCSS**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863400**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	140	20.0	250.0	0	56.0	18.6	130				
Aromatic Hydrocarbon (C10-C12)	104	10.0	125.0	0	82.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	100	10.0	125.0	0	80.1	43.6	124				
Aromatic Hydrocarbon (C16-C21)	101	10.0	125.0	0	81.1	49.5	124				
Aromatic Hydrocarbon (C21-C34)	93.6	10.0	125.0	0	74.9	54.8	124				
Surr: o-Terphenyl	74.3		100.0		74.3	50	150				

Sample ID: **2401315-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/19/2024**	RunNo: **89211**
Client ID: **MW-19D-S2**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863395**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	113	106	265.4	0	42.6	6.01	130				D
Aliphatic Hydrocarbon (C10-C12)	65.6	53.1	132.7	0	49.4	11.6	127				D
Aliphatic Hydrocarbon (C12-C16)	79.1	53.1	132.7	28.19	38.4	24.7	129				D
Aliphatic Hydrocarbon (C16-C21)	76.0	53.1	132.7	21.13	41.3	25.5	132				D
Aliphatic Hydrocarbon (C21-C34)	138	53.1	132.7	91.32	35.4	21.4	138				D
Surr: 1-Chlorooctadecane	46.4		106.2		43.7	50	150				DS

NOTES:
S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed and recovered within range.
Diluted due to matrix.

Sample ID: **2401315-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/19/2024**	RunNo: **89212**
Client ID: **MW-19D-S2**	Batch ID: **42666**		Analysis Date: **1/23/2024**	SeqNo: **1863402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	139	106	265.4	0	52.5	12.6	130				D
Aromatic Hydrocarbon (C10-C12)	97.9	53.1	132.7	0	73.8	26.3	130				D
Aromatic Hydrocarbon (C12-C16)	109	53.1	132.7	20.01	67.0	23.3	139				D
Aromatic Hydrocarbon (C16-C21)	145	53.1	132.7	52.00	70.1	32.2	131				D
Aromatic Hydrocarbon (C21-C34)	152	53.1	132.7	41.41	83.1	35.8	139				D
Surr: o-Terphenyl	75.7		106.2		71.3	50	150				D

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2401315-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89212**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863402**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
Diluted due to matrix.

Sample ID: **2401315-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89211**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863396**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	123	103	256.6	0	47.8	6.01	130	113.1	8.22	30	D
Aliphatic Hydrocarbon (C10-C12)	70.3	51.3	128.3	0	54.8	11.6	127	65.60	6.91	30	D
Aliphatic Hydrocarbon (C12-C16)	87.5	51.3	128.3	28.19	46.2	24.7	129	79.14	10.0	30	D
Aliphatic Hydrocarbon (C16-C21)	93.5	51.3	128.3	21.13	56.4	25.5	132	75.95	20.8	30	D
Aliphatic Hydrocarbon (C21-C34)	164	51.3	128.3	91.32	56.9	21.4	138	138.3	17.2	30	D
Surr: 1-Chlorooctadecane	51.6		102.6		50.2	50	150		0		D

NOTES:
Diluted due to matrix.

Sample ID: **2401315-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **1/19/2024** RunNo: **89212**
Client ID: **MW-19D-S2** Batch ID: **42666** Analysis Date: **1/23/2024** SeqNo: **1863403**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	145	103	256.6	0	56.4	12.6	130	139.2	3.83	30	D
Aromatic Hydrocarbon (C10-C12)	95.1	51.3	128.3	0	74.1	26.3	130	97.87	2.89	30	D
Aromatic Hydrocarbon (C12-C16)	99.1	51.3	128.3	20.01	61.6	23.3	139	109.0	9.50	30	D
Aromatic Hydrocarbon (C16-C21)	121	51.3	128.3	52.00	54.0	32.2	131	145.0	17.8	30	D
Aromatic Hydrocarbon (C21-C34)	182	51.3	128.3	41.41	109	35.8	139	151.6	18.1	30	D
Surr: o-Terphenyl	68.1		102.6		66.4	50	150		0		D

NOTES:
Diluted due to matrix.

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865040**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	20.5	2.50	20.00	0	103	70	130				
Aliphatic Hydrocarbon (C6-C8)	12.9	2.50	10.00	0	129	70	130				
Aliphatic Hydrocarbon (C8-C10)	20.3	2.50	10.00	0	203	70	130				S
Aliphatic Hydrocarbon (C10-C12)	13.1	2.50	10.00	0	131	70	130				S
Aromatic Hydrocarbon (C8-C10)	34.9	2.50	50.00	0	69.7	70	130				S
Aromatic Hydrocarbon (C10-C12)	6.27	2.50	10.00	0	62.7	70	130				S
Aromatic Hydrocarbon (C12-C13)	6.22	2.50	10.00	0	62.2	70	130				S
Surr: 2,5-dibromotoluene	2.02		2.500		81.0	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	0.989	2.50		0	0						J
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	1.30	2.50		0	0						J
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.75		2.500		70.0	60	140				

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MW-19D-S2**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		0	0			0	0	25	
Aliphatic Hydrocarbon (C6-C8)	ND	0.997		0	0			0.4596	200	25	
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		0	0			0	0	25	
Aliphatic Hydrocarbon (C10-C12)	2.21	0.997		0	0			2.132	3.80	25	Q+
Aromatic Hydrocarbon (C8-C10)	1.16	0.997		0	0			0.8308	32.7	25	BQ-

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **MW-19D-S2**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	1.17	0.997		0	0			1.288	9.87	25	Q-
Aromatic Hydrocarbon (C12-C13)	1.35	0.997		0	0			1.219	10.2	25	Q-
Surr: 2,5-dibromotoluene	0.657		0.9971		65.9	60	140		0	0	

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/25/2024**	SeqNo: **1865012**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	17.9	2.50	20.00	0	89.3	70	130				
Aliphatic Hydrocarbon (C6-C8)	11.2	2.50	10.00	0	112	70	130				
Aliphatic Hydrocarbon (C8-C10)	12.0	2.50	10.00	0	120	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.7	2.50	10.00	0	107	70	130				
Aromatic Hydrocarbon (C8-C10)	52.3	2.50	50.00	0	105	70	130				
Aromatic Hydrocarbon (C10-C12)	10.3	2.50	10.00	0	103	70	130				
Aromatic Hydrocarbon (C12-C13)	10.2	2.50	10.00	0	102	70	130				
Surr: 2,5-dibromotoluene	2.60		2.500		104	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/26/2024**	SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.83		2.500		73.3	60	140				

Work Order: 2401315
CLIENT: Friedman & Bruya
Project: 401180

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-42713** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89309**
Client ID: **MBLKS** Batch ID: **42713** Analysis Date: **1/26/2024** SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **2401469-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/24/2024** RunNo: **89309**
Client ID: **BATCH** Batch ID: **42713** Analysis Date: **1/26/2024** SeqNo: **1864986**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		0	0			0.4976	200	25	
Aliphatic Hydrocarbon (C6-C8)	24.9	1.40		0	0			22.74	9.25	25	
Aliphatic Hydrocarbon (C8-C10)	33.5	1.40		0	0			33.57	0.230	25	
Aromatic Hydrocarbon (C8-C10)	44.7	1.40		0	0			44.93	0.405	25	
Aromatic Hydrocarbon (C12-C13)	19.2	1.40		0	0			18.77	2.48	25	
Surr: 2,5-dibromotoluene	1.49		1.401		106	60	140		0	0	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401315
Logged by:	Clare Griggs	Date Received:	1/17/2024 10:53:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ MeOH
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401315

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
401180	D-631

REMARKS: EIM and EQuIS

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
MW-19D-S2		1/10/2024	1000	soil	2 + ac	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/17/24	0800
Received by:		Nathan Koffler	FAI	1/17/24	1053
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 9, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 22, 2024 from the Whidbey Marine 0204475-001, F&BI 401269 project. There are 72 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 22, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 401269 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401269 -01	MW-20D-S6
401269 -02	MW-21D-S1
401269 -03	MW-21D-S2
401269 -04	MW-21D-S3
401269 -05	MW-21D-S4
401269 -06	MW-21D-S5
401269 -07	MW-21D-S6
401269 -08	MW-21D-S7
401269 -09	MW-22D-S1
401269 -10	MW-22D-S2
401269 -11	MW-22D-S3
401269 -12	MW-22D-S4
401269 -13	MW-22D-S5
401269 -14	MW-22D-S6
401269 -15	MW-22D-S7
401269 -16	MW-22D-S8
401269 -17	MW-23D-S1
401269 -18	MW-23D-S2
401269 -19	MW-22D-Grab

Samples MW-21D-S2, MW-21D-S4, MW-21D-S7, and MW-23D-S2 were sent to Fremont Analytical for total organic carbon analysis. In addition, sample MW-21D-S7 was sent to Fremont for EPH and VPH analyses. The reports are enclosed.

The 8260D dichlorodifluoromethane calibration standard did not meet the acceptance criteria for several compounds. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: NA
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-20D-S6 401269-01	6
MW-21D-S1 401269-02	12
MW-21D-S2 401269-03	9
MW-21D-S3 401269-04	11
MW-21D-S4 401269-05	11
MW-21D-S5 401269-06	8
MW-21D-S6 401269-07	4
MW-21D-S7 401269-08	17
MW-22D-S1 401269-09	3
MW-22D-S2 401269-10	9
MW-22D-S4 401269-12	14

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: NA
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-22D-S5 401269-13	21
MW-22D-S8 401269-16	17
MW-23D-S1 401269-17	4
MW-23D-S2 401269-18	5

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S6 401269-01	<5	118
MW-21D-S1 401269-02	<5	115
MW-21D-S2 401269-03	<5	109
MW-21D-S3 401269-04	<5	117
MW-21D-S4 401269-05	<5	117
MW-21D-S5 401269-06	<5	119
MW-21D-S7 401269-08 1/20	1,200	ip
MW-22D-S1 401269-09	<5	125
MW-22D-S2 401269-10	<5	114
MW-22D-S4 401269-12	<5	117
MW-22D-S5 401269-13	<5	120

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D-S8 401269-16	14	121
MW-23D-S1 401269-17	<5	125
MW-23D-S2 401269-18	<5	117
Method Blank 04-0026 MB2	<5	122
Method Blank 04-0028 MB	<5	116

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-21D-S6 401269-07	<0.02	<0.02	<0.02	<0.06	<5	93
Method Blank 04-0026 MB2	<0.02	<0.02	<0.02	<0.06	<5	103

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/24/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D-Grab 401269-19	<1	6.1	<1	<3	<100	74
Method Blank 04-0027 MB	<1	<1	<1	<3	<100	70

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-20D-S6 401269-01	<50	<250	107
MW-21D-S1 401269-02	<50	<250	107
MW-21D-S2 401269-03	<50	<250	105
MW-21D-S3 401269-04	<50	<250	102
MW-21D-S4 401269-05	<50	<250	104
MW-21D-S5 401269-06	<50	<250	107
MW-21D-S6 401269-07	<50	<250	107
MW-21D-S7 401269-08	990 x	<250	117
MW-22D-S1 401269-09	<50	<250	110
MW-22D-S2 401269-10	<50	<250	105
MW-22D-S4 401269-12	<50	<250	108

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/23/24
Date Analyzed: 01/23/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-22D-S5 401269-13	<50	<250	108
MW-22D-S8 401269-16	<50	<250	109
MW-23D-S1 401269-17	<50	<250	108
MW-23D-S2 401269-18	<50	<250	111
Method Blank 04-174 MB	<50	<250	108

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/24/24
Date Analyzed: 01/24/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-22D-Grab 401269-19	250 x	<250	83
Method Blank 04-175 MB	<50	<250	92

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-01
Date Analyzed:	01/23/24	Data File:	401269-01.146
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.02
Lead	2.07

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-02
Date Analyzed:	01/23/24	Data File:	401269-02.182
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.54
Lead	1.33

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-03
Date Analyzed:	01/23/24	Data File:	401269-03.183
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.34

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-04
Date Analyzed:	01/23/24	Data File:	401269-04.184
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.61
Lead	2.05

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-05
Date Analyzed:	01/23/24	Data File:	401269-05.185
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.27

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-06
Date Analyzed:	01/23/24	Data File:	401269-06.186
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.99
Lead	1.58

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08
Date Analyzed:	01/23/24	Data File:	401269-08.187
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.89
Lead	5.75

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-09
Date Analyzed:	01/23/24	Data File:	401269-09.203
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.63
Lead	1.15

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-10
Date Analyzed:	01/23/24	Data File:	401269-10.204
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.84
Lead	1.51

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-12
Date Analyzed:	01/23/24	Data File:	401269-12.205
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.03
Lead	2.48

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-13
Date Analyzed:	01/23/24	Data File:	401269-13.206
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.55
Lead	4.60

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-16
Date Analyzed:	01/23/24	Data File:	401269-16.207
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.91
Lead	1.60

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-17
Date Analyzed:	01/23/24	Data File:	401269-17.208
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.42
Lead	1.18

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-18
Date Analyzed:	01/24/24	Data File:	401269-18.209
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.58
Lead	1.31

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	I4-56 mb
Date Analyzed:	01/23/24	Data File:	I4-56 mb.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-01 1/0.5
Date Analyzed:	01/23/24	Data File:	012311.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	99	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-02 1/0.5
Date Analyzed:	01/23/24	Data File:	012312.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.015
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-03 1/0.5
Date Analyzed:	01/23/24	Data File:	012313.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	84	120
Toluene-d8	99	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0092
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-04 1/0.5
Date Analyzed:	01/23/24	Data File:	012314.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.019
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-05 1/0.5
Date Analyzed:	01/23/24	Data File:	012315.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.042
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-06 1/0.5
Date Analyzed:	01/23/24	Data File:	012316.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.022
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08 1/0.5
Date Analyzed:	01/23/24	Data File:	012317.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	84	120
Toluene-d8	119	73	128
4-Bromofluorobenzene	120	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.27
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	1.3
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	5.8
Hexane	1.7	o-Xylene	1.8
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	0.55
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	2.7
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	8.5 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	19 ve
Benzene	<0.001	sec-Butylbenzene	0.39
Trichloroethene	<0.002	p-Isopropyltoluene	0.34
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.003	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.5
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-08 1/5
Date Analyzed:	01/24/24	Data File:	012430.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	84	120
Toluene-d8	108	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)
1,3,5-Trimethylbenzene	9.0
1,2,4-Trimethylbenzene	23

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-09 1/0.5
Date Analyzed:	01/24/24	Data File:	012415.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	102	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.018
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5 k	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5 ca
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-10 1/0.5
Date Analyzed:	01/23/24	Data File:	012319.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.011
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-12 1/0.5
Date Analyzed:	01/23/24	Data File:	012320.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0024
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-13 1/0.5
Date Analyzed:	01/23/24	Data File:	012321.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-16 1/0.5
Date Analyzed:	01/23/24	Data File:	012322.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	84	120
Toluene-d8	106	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.69
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	2.4
Hexane	<0.25	o-Xylene	0.81
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.061
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.13
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.42
Benzene	0.0040	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.13	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.22
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-17 1/0.5
Date Analyzed:	01/24/24	Data File:	012414.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	84	120
Toluene-d8	95	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0048
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5 k	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5 ca
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	401269-18 1/0.5
Date Analyzed:	01/23/24	Data File:	012324.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0036
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/23/24	Lab ID:	04-0117 mb 1/0.5
Date Analyzed:	01/23/24	Data File:	012309.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	84	120
Toluene-d8	97	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5 k	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D-Grab	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/25/24	Lab ID:	401269-19
Date Analyzed:	01/25/24	Data File:	012512.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/25/24	Lab ID:	04-0125 mb
Date Analyzed:	01/25/24	Data File:	012508.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-01 1/5
Date Analyzed:	01/24/24	Data File:	012411.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	65	11	158
Terphenyl-d14	87	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-02 1/5
Date Analyzed:	01/24/24	Data File:	012412.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	80	45	117
2,4,6-Tribromophenol	62	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-03 1/5
Date Analyzed:	01/24/24	Data File:	012413.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	80	45	117
2,4,6-Tribromophenol	65	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-04 1/5
Date Analyzed:	01/24/24	Data File:	012414.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	73	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	69	11	158
Terphenyl-d14	83	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-05 1/5
Date Analyzed:	01/24/24	Data File:	012415.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	68	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-06 1/5
Date Analyzed:	01/24/24	Data File:	012416.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	10	198
2-Fluorobiphenyl	73	45	117
2,4,6-Tribromophenol	64	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-08 1/5
Date Analyzed:	01/24/24	Data File:	012417.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	97	10	198
2-Fluorobiphenyl	82	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	6.5 ve
2-Methylnaphthalene	16 ve
1-Methylnaphthalene	5.8
Acenaphthylene	<0.01
Acenaphthene	0.014
Fluorene	0.053
Phenanthrene	0.088
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.020
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-08 1/50
Date Analyzed:	01/25/24	Data File:	012515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	92 d	10	198
2-Fluorobiphenyl	81 d	45	117
2,4,6-Tribromophenol	65 d	11	158
Terphenyl-d14	80 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	7.6
2-Methylnaphthalene	16

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-09 1/5
Date Analyzed:	01/24/24	Data File:	012418.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	63	10	198
2-Fluorobiphenyl	77	45	117
2,4,6-Tribromophenol	74	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-10 1/5
Date Analyzed:	01/24/24	Data File:	012419.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	65	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	67	11	158
Terphenyl-d14	85	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-12 1/5
Date Analyzed:	01/24/24	Data File:	012420.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	62	10	198
2-Fluorobiphenyl	75	45	117
2,4,6-Tribromophenol	68	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-13 1/5
Date Analyzed:	01/24/24	Data File:	012421.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	70	11	158
Terphenyl-d14	82	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-16 1/5
Date Analyzed:	01/24/24	Data File:	012422.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	70	10	198
2-Fluorobiphenyl	83	45	117
2,4,6-Tribromophenol	75	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.030
2-Methylnaphthalene	0.032
1-Methylnaphthalene	0.012
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-17 1/5
Date Analyzed:	01/24/24	Data File:	012423.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60	10	198
2-Fluorobiphenyl	74	45	117
2,4,6-Tribromophenol	72	11	158
Terphenyl-d14	89	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/22/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	401269-18 1/5
Date Analyzed:	01/24/24	Data File:	012424.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	10	198
2-Fluorobiphenyl	81	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	86	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/24/24	Lab ID:	04-0177 mb 1/5
Date Analyzed:	01/24/24	Data File:	012410.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	10	198
2-Fluorobiphenyl	93	45	117
2,4,6-Tribromophenol	74	11	158
Terphenyl-d14	98	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269
Date Extracted: 01/26/24
Date Analyzed: 01/29/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-22D-Grab 401269-19	710
Method Blank I4-0062MB	<5

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401253-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	93	70-130
Toluene	mg/kg (ppm)	1.0	91	70-130
Ethylbenzene	mg/kg (ppm)	1.0	93	70-130
Xylenes	mg/kg (ppm)	3.0	97	70-130
Gasoline	mg/kg (ppm)	40	95	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401268-11 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	85	70-130
Toluene	mg/kg (ppm)	1.0	85	70-130
Ethylbenzene	mg/kg (ppm)	1.0	87	70-130
Xylenes	mg/kg (ppm)	3.0	90	70-130
Gasoline	mg/kg (ppm)	40	97	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401285-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	86	70-130
Toluene	ug/L (ppb)	50	84	70-130
Ethylbenzene	ug/L (ppb)	50	88	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	97	70-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401269-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	104	104	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	78-121

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	100	65-151	0

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401269-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	3.78	96 b	102 b	75-125	6 b
Lead	mg/kg (ppm)	50	1.94	85	89	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Lead	mg/kg (ppm)	50	93	80-120

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401269-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	67	65	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	88	90	10-126	2
Vinyl chloride	mg/kg (ppm)	2	<0.05	92	89	10-138	3
Bromomethane	mg/kg (ppm)	2	<0.5	81	78	10-163	4
Chloroethane	mg/kg (ppm)	2	<0.5	82	77	10-176	6
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	89	87	10-176	2
Acetone	mg/kg (ppm)	10	<5	83	88	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	96	94	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	92	92	10-137	0
Methylene chloride	mg/kg (ppm)	2	<0.5	89	89	10-156	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	98	94	21-145	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	94	90	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	96	96	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	94	91	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	94	94	25-135	0
Chloroform	mg/kg (ppm)	2	<0.05	97	94	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	100	98	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	101	102	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	97	96	10-156	1
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	97	95	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	102	97	9-164	5
Benzene	mg/kg (ppm)	2	<0.03	95	92	29-129	3
Trichloroethene	mg/kg (ppm)	2	<0.02	95	92	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	99	95	30-135	4
Bromodichloromethane	mg/kg (ppm)	2	<0.05	104	102	23-155	2
Dibromomethane	mg/kg (ppm)	2	<0.05	95	91	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	97	97	24-155	0
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	102	100	28-144	2
Toluene	mg/kg (ppm)	2	<0.05	103	101	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	107	103	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	110	107	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	102	101	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	108	102	31-137	6
Tetrachloroethene	mg/kg (ppm)	2	<0.025	104	101	20-133	3
Dibromochloromethane	mg/kg (ppm)	2	<0.05	109	107	28-150	2
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	105	103	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	105	99	32-129	6
Ethylbenzene	mg/kg (ppm)	2	<0.05	104	101	32-137	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	103	99	31-143	4
m,p-Xylene	mg/kg (ppm)	4	<0.1	104	100	34-136	4
o-Xylene	mg/kg (ppm)	2	<0.05	105	99	33-134	6
Styrene	mg/kg (ppm)	2	<0.05	106	103	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	104	100	31-142	4
Bromoform	mg/kg (ppm)	2	<0.05	112	108	21-156	4
n-Propylbenzene	mg/kg (ppm)	2	<0.05	102	104	23-146	2
Bromobenzene	mg/kg (ppm)	2	<0.05	106	107	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	103	106	18-149	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	103	104	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	104	107	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	101	103	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	101	102	31-136	1
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	100	101	30-137	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	101	104	10-182	3
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	102	106	23-145	4
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	103	106	21-149	3
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	102	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	99	103	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	99	102	31-132	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	105	104	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	104	106	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	109	116	10-142	6
Naphthalene	mg/kg (ppm)	2	<0.05	99	102	14-157	3
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	102	106	20-144	4

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	82	10-146
Chloromethane	mg/kg (ppm)	2	103	27-133
Vinyl chloride	mg/kg (ppm)	2	99	22-139
Bromomethane	mg/kg (ppm)	2	76	10-201
Chloroethane	mg/kg (ppm)	2	71	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	94	10-196
Acetone	mg/kg (ppm)	10	98	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	104	47-128
Hexane	mg/kg (ppm)	2	101	43-142
Methylene chloride	mg/kg (ppm)	2	92	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	101	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	99	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	84	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	99	64-135
Chloroform	mg/kg (ppm)	2	99	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	110	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	104	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	94	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	99	64-136
Carbon tetrachloride	mg/kg (ppm)	2	102	60-139
Benzene	mg/kg (ppm)	2	98	65-136
Trichloroethene	mg/kg (ppm)	2	97	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	101	61-145
Bromodichloromethane	mg/kg (ppm)	2	103	57-126
Dibromomethane	mg/kg (ppm)	2	98	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	105	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	104	65-143
Toluene	mg/kg (ppm)	2	101	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	105	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	108	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	105	67-128
Tetrachloroethene	mg/kg (ppm)	2	104	68-128
Dibromochloromethane	mg/kg (ppm)	2	105	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	102	66-129
Chlorobenzene	mg/kg (ppm)	2	103	67-128
Ethylbenzene	mg/kg (ppm)	2	103	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	102	64-121
m,p-Xylene	mg/kg (ppm)	4	103	68-128
o-Xylene	mg/kg (ppm)	2	102	67-129
Styrene	mg/kg (ppm)	2	106	67-129
Isopropylbenzene	mg/kg (ppm)	2	101	68-128
Bromoform	mg/kg (ppm)	2	111	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	107	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	109	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	108	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	116	61-137
2-Chlorotoluene	mg/kg (ppm)	2	106	69-128
4-Chlorotoluene	mg/kg (ppm)	2	106	67-127
tert-Butylbenzene	mg/kg (ppm)	2	104	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	107	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	106	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	105	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	106	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	112	50-153
Naphthalene	mg/kg (ppm)	2	104	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	105	61-126

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401274-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	97	50-150
Chloroethane	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	91	50-150
Methylene chloride	ug/L (ppb)	10	<5	98	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	10-211
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	110	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	98	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	96	35-149
Tetrachloroethene	ug/L (ppb)	10	<1	103	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	100	101	64-142	1
Chloroethane	ug/L (ppb)	10	99	101	70-130	2
1,1-Dichloroethene	ug/L (ppb)	10	93	94	64-140	1
Methylene chloride	ug/L (ppb)	10	92	99	43-134	7
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	98	70-130	4
1,1-Dichloroethane	ug/L (ppb)	10	99	103	70-130	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	100	70-130	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	103	107	70-130	4
1,1,1-Trichloroethane	ug/L (ppb)	10	98	100	70-130	2
Trichloroethene	ug/L (ppb)	10	92	95	70-130	3
Tetrachloroethene	ug/L (ppb)	10	100	102	70-130	2

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401269-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	78	84	28-125	7
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	84	90	10-192	7
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	79	86	10-163	8
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	85	90	45-128	6
Acenaphthene	mg/kg (ppm)	0.83	<0.01	82	87	36-125	6
Fluorene	mg/kg (ppm)	0.83	<0.01	84	90	48-121	7
Phenanthrene	mg/kg (ppm)	0.83	<0.01	82	89	46-122	8
Anthracene	mg/kg (ppm)	0.83	<0.01	85	91	30-144	7
Fluoranthene	mg/kg (ppm)	0.83	<0.01	84	92	50-150	9
Pyrene	mg/kg (ppm)	0.83	<0.01	85	87	40-134	2
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	84	90	50-150	7
Chrysene	mg/kg (ppm)	0.83	<0.01	90	95	50-150	5
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	95	99	50-150	4
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	88	92	50-150	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	96	98	50-150	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	94	100	40-140	6
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	92	98	41-136	6
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	88	93	29-139	6

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	91	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	98	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	93	63-113
Acenaphthylene	mg/kg (ppm)	0.83	97	70-130
Acenaphthene	mg/kg (ppm)	0.83	95	66-112
Fluorene	mg/kg (ppm)	0.83	99	67-117
Phenanthrene	mg/kg (ppm)	0.83	93	70-130
Anthracene	mg/kg (ppm)	0.83	98	70-130
Fluoranthene	mg/kg (ppm)	0.83	102	70-130
Pyrene	mg/kg (ppm)	0.83	92	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	97	70-130
Chrysene	mg/kg (ppm)	0.83	103	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	111	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	102	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	111	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	108	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	105	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	65-130

Date of Report: 02/09/24
Date Received: 01/22/24
Project: Whidbey Marine 0204475-001, F&BI 401269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	102	104	35-146	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401269

SAMPLE CHAIN OF CUSTODY 01/22/24 C2/VW2/N3

Page # 1 of 2

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whitney Marine	0204475-001
REMARKS	INVOICE TO
Print C-Grams	
Project specific RLs? - Yes / No	

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	As+Pb	EDB/EDC/MTBE	TOC	EPH and VPH	A-per HG 01/24/24 ME Notes
MW-20D-56	01 A-F	1/15/24	1235	Soil	6	X	X			X	X		X	X			Hold for other
MW-21D-51	02	1/16/24	0940			X	X			X	X		X	X			analysis
MW-21D-52	03		1050			X	X			X	X		X	X	X		
MW-21D-53	04		0950			X	X			X	X		X	X			
MW-21D-54	05		1030			X	X			X	X		X	X	X		
MW-21D-55	06		1100			X	X			X	X		X	X			
MW-21D-56	07		1140			X	X	X									
MW-21D-57	08	↓	1430			X	X			X	X		X	X	X	A	
MW-22D-51	09	1/17/24	1330			X	X			X	X		X	X			
MW-22D-52	10	↓	1340	↓	↓	X	X			X	X		X	X			↓

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/22/24	0745
Received by:	VINH	FBI	1-22-24	1320
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401269

SAMPLE CHAIN OF CUSTODY 01/22/24 C2/VW2/N3

Page # _____ of _____

Report To _____

Company HA

Address _____

City, State, ZIP _____

Phone _____ Email _____

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS: Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	~~PCBs EPA 8082~~ TSS	As+Pb	EDB/EDC/MTBE	TOC	cVOCs	Notes
MW-22D-53	11 A-F	1/17/24	1435	soil	6												Hold for
MW-22D-54	12		1500			X	X			X	X		X	X			other analysis
MW-22D-55	13		1530			X	X			X	X		X	X			
MW-22D-56	14	1/18/24	1700														
MW-22D-57	15	1/19/24	0920														
MW-22D-58	16 A-E		0950			X	X			X	X		X	X			
MW-23D-51	17 A-F	1/19/24	1500			X	X			X	X		X	X			
MW-23D-52	18		1505			X	X			X	X		X	X	A		
MW-22D-Grab	19 A-H	1/18/24	1130	water	#8	X	X	X				X	X			X	Label MW-22B-Grab GW AP 01/22

A-per HG
01/22/24 ME

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Galcahan	HA	1/22/24	0745
Received by: VM	VINA	FBI	1-22-24	1320
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401469

February 07, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 1/24/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/07/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401469

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401469-001	MW-21D-S7	01/16/2024 2:30 PM	01/24/2024 4:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401469**
Date: **2/7/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2401469**
Date Reported: **2/7/2024**

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401469-001 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42747		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	27.5	23.1		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C10-C12)	80.4	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C12-C16)	54.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C8-C10)	23.8	23.1		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C10-C12)	91.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C12-C16)	102	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C16-C21)	20.8	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.5		mg/Kg-dry	1	2/5/2024 12:17:30 PM
Surr: 1-Chlorooctadecane	51.8	50 - 150		%Rec	1	2/5/2024 12:17:30 PM
Surr: o-Terphenyl	79.9	50 - 150		%Rec	1	2/5/2024 12:17:30 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42713		Analyst: SG
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C6-C8)	22.7	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C8-C10)	33.6	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aliphatic Hydrocarbon (C10-C12)	47.6	14.0	DH	mg/Kg-dry	10	1/31/2024 10:00:00 PM
Aromatic Hydrocarbon (C8-C10)	44.9	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Aromatic Hydrocarbon (C10-C12)	29.0	14.0	DH	mg/Kg-dry	10	1/31/2024 10:00:00 PM
Aromatic Hydrocarbon (C12-C13)	18.8	1.40		mg/Kg-dry	1	1/26/2024 1:59:00 PM
Surr: 2,5-dibromotoluene	110	60 - 140		%Rec	1	1/26/2024 1:59:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R89195		Analyst: YL
Percent Moisture	13.4	0.500		wt%	1	1/25/2024 9:31:14 AM

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42747**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MBLKS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867980**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	59.5		100.0		59.5	50	150				

Sample ID: **MB-42747**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MBLKS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867987**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	74.8		100.0		74.8	50	150				

Sample ID: **LCS-42747**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **LCSS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867981**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	108	20.0	250.0	0	43.1	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	69.3	10.0	125.0	0	55.5	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	72.5	10.0	125.0	0	58.0	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	72.3	10.0	125.0	0	57.8	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	89.7	10.0	125.0	0	71.8	36.6	144				
Surr: 1-Chlorooctadecane	59.3		100.0		59.3	50	150				

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42747**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **LCSS**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867988**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	160	20.0	250.0	0	63.9	18.6	130				
Aromatic Hydrocarbon (C10-C12)	109	10.0	125.0	0	86.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	114	10.0	125.0	0	91.3	43.6	124				
Aromatic Hydrocarbon (C16-C21)	117	10.0	125.0	0	93.5	49.5	124				
Aromatic Hydrocarbon (C21-C34)	101	10.0	125.0	0	80.7	54.8	124				
Surr: o-Terphenyl	81.6		100.0		81.6	50	150				

Sample ID: **2401469-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867983**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	192	23.0	287.3	27.53	57.4	6.01	130				
Aliphatic Hydrocarbon (C10-C12)	201	11.5	143.6	80.37	84.1	11.6	127				
Aliphatic Hydrocarbon (C12-C16)	145	11.5	143.6	54.78	63.0	24.7	129				
Aliphatic Hydrocarbon (C16-C21)	91.7	11.5	143.6	10.07	56.9	25.5	132				
Aliphatic Hydrocarbon (C21-C34)	100	11.5	143.6	0	70.0	21.4	138				
Surr: 1-Chlorooctadecane	61.9		114.9		53.9	50	150				

Sample ID: **2401469-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867990**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	219	23.0	287.3	23.77	68.1	12.6	130				
Aromatic Hydrocarbon (C10-C12)	281	11.5	143.6	91.80	132	26.3	130				S
Aromatic Hydrocarbon (C12-C16)	253	11.5	143.6	101.7	105	23.3	139				
Aromatic Hydrocarbon (C16-C21)	121	11.5	143.6	20.82	69.6	32.2	131				
Aromatic Hydrocarbon (C21-C34)	108	11.5	143.6	0	75.4	35.8	139				
Surr: o-Terphenyl	85.3		114.9		74.2	50	150				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2401469-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89470**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867984**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	200	23.1	288.1	27.53	60.0	6.01	130	192.4	4.12	30	
Aliphatic Hydrocarbon (C10-C12)	247	11.5	144.1	80.37	115	11.6	127	201.1	20.3	30	
Aliphatic Hydrocarbon (C12-C16)	180	11.5	144.1	54.78	86.9	24.7	129	145.3	21.3	30	
Aliphatic Hydrocarbon (C16-C21)	104	11.5	144.1	10.07	65.4	25.5	132	91.74	12.8	30	
Aliphatic Hydrocarbon (C21-C34)	116	11.5	144.1	0	80.5	21.4	138	100.5	14.3	30	
Surr: 1-Chlorooctadecane	70.7		115.3		61.3	50	150		0		

Sample ID: **2401469-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **1/29/2024**	RunNo: **89471**
Client ID: **MW-21D-S7**	Batch ID: **42747**		Analysis Date: **2/5/2024**	SeqNo: **1867991**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	205	23.1	288.1	23.77	62.9	12.6	130	219.4	6.77	30	
Aromatic Hydrocarbon (C10-C12)	286	11.5	144.1	91.80	135	26.3	130	281.2	1.69	30	S
Aromatic Hydrocarbon (C12-C16)	265	11.5	144.1	101.7	113	23.3	139	252.9	4.60	30	
Aromatic Hydrocarbon (C16-C21)	127	11.5	144.1	20.82	73.8	32.2	131	120.8	5.17	30	
Aromatic Hydrocarbon (C21-C34)	110	11.5	144.1	0	76.5	35.8	139	108.3	1.79	30	
Surr: o-Terphenyl	84.3		115.3		73.1	50	150		0		

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42713** SampType: **LCS** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **LCSS** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865040**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	20.5	2.50	20.00	0	103	70	130				
Aliphatic Hydrocarbon (C6-C8)	12.9	2.50	10.00	0	129	70	130				
Aliphatic Hydrocarbon (C8-C10)	20.3	2.50	10.00	0	203	70	130				S
Aliphatic Hydrocarbon (C10-C12)	13.1	2.50	10.00	0	131	70	130				S
Aromatic Hydrocarbon (C8-C10)	34.9	2.50	50.00	0	69.7	70	130				S
Aromatic Hydrocarbon (C10-C12)	6.27	2.50	10.00	0	62.7	70	130				S
Aromatic Hydrocarbon (C12-C13)	6.22	2.50	10.00	0	62.2	70	130				S
Surr: 2,5-dibromotoluene	2.02		2.500		81.0	60	140				

NOTES:
S - Outlying spike recovery(ies) observed. Samples will be qualified with a *.

Sample ID: **MB-42713** SampType: **MBLK** Units: **mg/Kg** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **MBLKS** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865036**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	1.75		2.500		70.0	60	140				

Sample ID: **2401315-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **1/24/2024** RunNo: **89314**
Client ID: **BATCH** Batch ID: **42713** Analysis Date: **1/24/2024** SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C8-C10)	ND	0.997		0	0			0		25	
Aliphatic Hydrocarbon (C10-C12)	2.21	0.997		0	0			2.132	3.80	25	Q+

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2401315-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **1/24/2024**	RunNo: **89314**
Client ID: **BATCH**	Batch ID: **42713**		Analysis Date: **1/24/2024**	SeqNo: **1865038**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	1.16	0.997		0	0			0.8308	32.7	25	BQ-
Aromatic Hydrocarbon (C10-C12)	1.17	0.997		0	0			1.288	9.87	25	Q-
Aromatic Hydrocarbon (C12-C13)	1.35	0.997		0	0			1.219	10.2	25	Q-
Surr: 2,5-dibromotoluene	0.657		0.9971		65.9	60	140		0	0	

NOTES:
Q+ - Associated calibration verification is above acceptance criteria. Result may be high-biased.
Q- - Associated calibration verification is below acceptance criteria. Result may be low-biased.

Sample ID: **LCS-42713**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **LCSS**	Batch ID: **42713**		Analysis Date: **1/25/2024**	SeqNo: **1865012**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	17.9	2.50	20.00	0	89.3	70	130				
Aliphatic Hydrocarbon (C6-C8)	11.2	2.50	10.00	0	112	70	130				
Aliphatic Hydrocarbon (C8-C10)	12.0	2.50	10.00	0	120	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.7	2.50	10.00	0	107	70	130				
Aromatic Hydrocarbon (C8-C10)	52.3	2.50	50.00	0	105	70	130				
Aromatic Hydrocarbon (C10-C12)	10.3	2.50	10.00	0	103	70	130				
Aromatic Hydrocarbon (C12-C13)	10.2	2.50	10.00	0	102	70	130				
Surr: 2,5-dibromotoluene	2.60		2.500		104	60	140				

Sample ID: **MB-42713**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **1/24/2024**	RunNo: **89309**
Client ID: **MBLKS**	Batch ID: **42713**		Analysis Date: **1/26/2024**	SeqNo: **1864974**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						

Work Order: 2401469
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-42713**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MBLKS**	Batch ID: **42713**					Analysis Date: **1/26/2024**		SeqNo: **1864974**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,5-dibromotoluene	1.83		2.500		73.3	60	140				

Sample ID: **2401469-001BDUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MW-21D-S7**	Batch ID: **42713**					Analysis Date: **1/26/2024**		SeqNo: **1864986**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.40		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	24.9	1.40		0	0			22.74	9.25	25	
Aliphatic Hydrocarbon (C8-C10)	33.5	1.40		0	0			33.57	0.230	25	
Aromatic Hydrocarbon (C8-C10)	44.7	1.40		0	0			44.93	0.405	25	
Aromatic Hydrocarbon (C12-C13)	19.2	1.40		0	0			18.77	2.48	25	
Surr: 2,5-dibromotoluene	1.49		1.401		106	60	140		0	0	

Sample ID: **2401469-001BDUP**	SampType: **DUP**			Units: **mg/Kg-dry**		Prep Date: **1/24/2024**		RunNo: **89309**		
Client ID: **MW-21D-S7**	Batch ID: **42713**					Analysis Date: **1/31/2024**		SeqNo: **1868193**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	49.0	14.0		0	0			47.58	2.92	25	DH
Aromatic Hydrocarbon (C10-C12)	29.2	14.0		0	0			29.04	0.665	25	DH
Surr: 2,5-dibromotoluene	10.0		14.01		71.4	60	140		0	0	DH

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401469
Logged by:	Clare Griggs	Date Received:	1/24/2024 4:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ MeOH
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☐	No ☑	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401469

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
401269	D-645

REMARKS: EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: EPH	VPH									Notes
MW-21D-S7		1/16/2024	1430	soil	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/24/24	1515
Received by:		Matthew Wolfe	FAI	1/24/24	1630
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401269
Work Order Number: 2401419

January 30, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 1/23/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *01/30/2024*

CLIENT: Friedman & Bruya
Project: 401269
Work Order: 2401419

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401419-001	MW-21D-S2	01/16/2024 10:50 AM	01/23/2024 1:30 PM
2401419-002	MW-21D-S4	01/16/2024 10:30 AM	01/23/2024 1:30 PM
2401419-003	MW-21D-S7	01/16/2024 2:30 PM	01/23/2024 1:30 PM
2401419-004	MW-21D-S2	01/19/2024 3:05 PM	01/23/2024 1:30 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401419**
Date: **1/30/2024**

CLIENT: Friedman & Bruya
Project: 401269

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401269

Lab ID: 2401419-001 **Collection Date:** 1/16/2024 10:50:00 AM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 1:05:00 PM

Lab ID: 2401419-002 **Collection Date:** 1/16/2024 10:30:00 AM
Client Sample ID: **MW-21D-S4** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 2:32:00 PM

Lab ID: 2401419-003 **Collection Date:** 1/16/2024 2:30:00 PM
Client Sample ID: **MW-21D-S7** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:15:00 PM

Lab ID: 2401419-004 **Collection Date:** 1/19/2024 3:05:00 PM
Client Sample ID: **MW-21D-S2** **Matrix:** Soil

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42741		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	1/29/2024 3:32:00 PM

Work Order: 2401419
CLIENT: Friedman & Bruya
Project: 401269

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42741**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MBLKS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864259**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42741**	SampType: **LCS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **LCSS**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864260**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.07	0.150	1.000	0	107	80	120				

Sample ID: **2401419-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864262**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2401419-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864263**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125				

Sample ID: **2401419-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **1/29/2024**		RunNo: **89268**		
Client ID: **MW-21D-S2**	Batch ID: **42741**					Analysis Date: **1/29/2024**		SeqNo: **1864264**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.04	0.150	1.000	0	104	75	125	1.106	6.63	20	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401419
Logged by:	Clare Griggs	Date Received:	1/23/2024 1:30:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	3.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 401269

PO #: D-641

REMARKS: EIM and EQuIS 4

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Total Organic Carbon	Nitrate	Nitrite	Sulfate	RSK-175						Notes
						ANALYSES REQUESTED										
MW-21D-S2		1/16/2024	1050	soil	1	x										
MW-21D-S4		1/16/2024	1030	soil	1	x										
MW-21D-S7		1/16/2024	1430	soil	1	x										
MW-23D-S2		1/19/2024	1505	soil	1	x										

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/23/24	0840
Received by:		Nathan Koppes	F&B	1/23/24	1330
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 16, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 6, 2024 from the Whidbey Marine 0204475-001, F&BI 402067 project. There are 33 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0216R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402067 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402067 -01	MW-1S
402067 -02	MW-3S
402067 -03	MW-22D
402067 -04	MW-23D

Samples MW-22D and MW-3D were sent to Fremont Analytical for TOC, nitrate, nitrite, sulfate, chloride, ammonia, alkalinity, sulfide, and dissolved gases analyses. The report is enclosed.

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-22D 402067-03	220	99
MW-23D 402067-04 1/20	62,000	103
Method Blank 04-202 MB	<100	92

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-1S 402067-01	<1	<1	<1	<3	<100	77
MW-3S 402067-02	<1	<1	<1	<3	<100	86
Method Blank 04-202 MB	<1	<1	<1	<3	<100	81

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1S 402067-01 1/1.2	<60	<300	98
MW-3S 402067-02 1/1.2	<60	<300	104
MW-22D 402067-03 1/1.2	<60	<300	99
MW-23D 402067-04 1/1.2	2,900 x	<300	103
Method Blank 04-325 MB	<50	<250	94

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/07/24
Date Analyzed: 02/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-1S 402067-01 1/1.2	70 x	<300	98
MW-3S 402067-02 1/1.2	63 x	<300	102
MW-22D 402067-03 1/1.2	130 x	<300	101
MW-23D 402067-04 1/1.2	7,000 x	<300	102
Method Blank 04-325 MB	<50	<250	92

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	402067-03.160
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.56
Lead	1.48

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03 x50
Date Analyzed:	02/09/24	Data File:	402067-03 x50.077
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	1,010

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	402067-04.161
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.4
Lead	1.26

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04 x50
Date Analyzed:	02/09/24	Data File:	402067-04 x50.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,000

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	I4-101 mb
Date Analyzed:	02/08/24	Data File:	I4-101 mb.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	402067-03.162
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.07
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	402067-04.163
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11.6
Lead	1.59

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	I4-99 mb
Date Analyzed:	02/08/24	Data File:	I4-99 mb.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-1S	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-01
Date Analyzed:	02/07/24	Data File:	020719.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-3S	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-02
Date Analyzed:	02/07/24	Data File:	020720.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	106	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-03
Date Analyzed:	02/07/24	Data File:	020721.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	106	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	8.9
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	26
Hexane	<5	o-Xylene	11
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	1.6
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	4.3
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	9.7	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	2.2
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-04 1/200
Date Analyzed:	02/07/24	Data File:	020722.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<200	1,3-Dichloropropane	<200
Chloromethane	<2,000	Tetrachloroethene	<200
Vinyl chloride	<4	Dibromochloromethane	<100
Bromomethane	<1,000	1,2-Dibromoethane (EDB)	<2
Chloroethane	<200	Chlorobenzene	<200
Trichlorofluoromethane	<200 ca	Ethylbenzene	1,300
Acetone	<10,000 ca	1,1,1,2-Tetrachloroethane	<200
1,1-Dichloroethene	<200	m,p-Xylene	4,400
Hexane	<1,000	o-Xylene	1,000
Methylene chloride	<1,000	Styrene	<200
Methyl t-butyl ether (MTBE)	<200	Isopropylbenzene	<200
trans-1,2-Dichloroethene	<200	Bromoform	<1,000
1,1-Dichloroethane	<200	n-Propylbenzene	<200
2,2-Dichloropropane	<200	Bromobenzene	<200
cis-1,2-Dichloroethene	<200	1,3,5-Trimethylbenzene	220
Chloroform	<200	1,1,2,2-Tetrachloroethane	<40
2-Butanone (MEK)	<4,000	1,2,3-Trichloropropane	<200
1,2-Dichloroethane (EDC)	<40	2-Chlorotoluene	<200
1,1,1-Trichloroethane	<200	4-Chlorotoluene	<200
1,1-Dichloropropene	<200	tert-Butylbenzene	<200
Carbon tetrachloride	<100	1,2,4-Trimethylbenzene	580
Benzene	11 j	sec-Butylbenzene	<200
Trichloroethene	<100	p-Isopropyltoluene	<200
1,2-Dichloropropane	<200	1,3-Dichlorobenzene	<200
Bromodichloromethane	<100	1,4-Dichlorobenzene	<200
Dibromomethane	<200	1,2-Dichlorobenzene	<200
4-Methyl-2-pentanone	<2,000	1,2-Dibromo-3-chloropropane	<2,000
cis-1,3-Dichloropropene	<80	1,2,4-Trichlorobenzene	<200
Toluene	15,000	Hexachlorobutadiene	<100
trans-1,3-Dichloropropene	<80	Naphthalene	380
1,1,2-Trichloroethane	<100	1,2,3-Trichlorobenzene	<200
2-Hexanone	<2,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	04-0284 mb
Date Analyzed:	02/07/24	Data File:	020709.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.025 j	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-03
Date Analyzed:	02/08/24	Data File:	020816.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	11	173
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	65 ca	10	140
Terphenyl-d14	74	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	1.4
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04
Date Analyzed:	02/08/24	Data File:	020817.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	98	11	173
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	95 ca	10	140
Terphenyl-d14	80	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	160 ve
2-Methylnaphthalene	72 ve
1-Methylnaphthalene	32
Acenaphthylene	<0.02
Acenaphthene	0.10
Fluorene	0.18
Phenanthrene	0.18
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	402067-04 1/100
Date Analyzed:	02/09/24	Data File:	020916.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60 d	15	144
2-Fluorobiphenyl	80 d	25	128
2,4,6-Tribromophenol	280 d	10	142
Terphenyl-d14	80 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	230
2-Methylnaphthalene	65

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/08/24	Lab ID:	04-0335 mb
Date Analyzed:	02/08/24	Data File:	020811a.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	15	144
2-Fluorobiphenyl	65	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067
Date Extracted: 02/09/24
Date Analyzed: 02/12/24

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-22D 402067-03	82
MW-23D 402067-04	46
Method Blank I4-0105 MB	<5

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402067-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	96	70-130
Toluene	ug/L (ppb)	50	88	70-130
Ethylbenzene	ug/L (ppb)	50	82	70-130
Xylenes	ug/L (ppb)	150	80	70-130
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 402100-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	22.1	83 b	81 b	75-125	2 b
Lead	ug/L (ppb)	10	<1	86	87	75-125	1
Manganese	ug/L (ppb)	20	2.76	92	95	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Lead	ug/L (ppb)	10	93	80-120
Manganese	ug/L (ppb)	20	100	80-120

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	13.4	95 b	97 b	75-125	2 b
Lead	ug/L (ppb)	10	1.15	81	78	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Lead	ug/L (ppb)	10	93	80-120

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402068-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	30-221
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	99	50-150
Bromomethane	ug/L (ppb)	10	<5	94	50-150
Chloroethane	ug/L (ppb)	10	<1	96	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	79	50-150
Acetone	ug/L (ppb)	50	<50	44	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	88	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	91	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	93	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	92	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
Chloroform	ug/L (ppb)	10	<1	89	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	84	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	91	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	87	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	88	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	100	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	93	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	101	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
Tetrachloroethene	ug/L (ppb)	10	3.6	95 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	105	50-150
Chlorobenzene	ug/L (ppb)	10	<1	95	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	89	50-150
Styrene	ug/L (ppb)	10	<1	88	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	86	50-150
Bromoform	ug/L (ppb)	10	<5	108	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	114	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	108	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	105	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	50-150
Naphthalene	ug/L (ppb)	10	<1	103	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	94	50-150

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	105	104	46-206	1
Chloromethane	ug/L (ppb)	10	105	103	59-132	2
Vinyl chloride	ug/L (ppb)	10	100	99	64-142	1
Bromomethane	ug/L (ppb)	10	93	102	50-197	9
Chloroethane	ug/L (ppb)	10	97	96	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	87	75	51-159	15
Acetone	ug/L (ppb)	50	51	52	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	90	90	64-140	0
Hexane	ug/L (ppb)	10	100	102	54-136	2
Methylene chloride	ug/L (ppb)	10	97	93	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	96	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	95	70-130	3
1,1-Dichloroethane	ug/L (ppb)	10	94	94	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	97	96	64-148	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	70-130	0
Chloroform	ug/L (ppb)	10	87	90	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	75	89	47-112	17
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	93	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	89	88	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	95	92	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	102	101	70-130	1
Benzene	ug/L (ppb)	10	101	98	70-130	3
Trichloroethene	ug/L (ppb)	10	93	90	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	95	70-130	4
Bromodichloromethane	ug/L (ppb)	10	98	94	70-130	4
Dibromomethane	ug/L (ppb)	10	103	100	70-130	3
4-Methyl-2-pentanone	ug/L (ppb)	50	103	105	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	96	69-131	4
Toluene	ug/L (ppb)	10	99	97	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	99	96	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	104	101	70-130	3
2-Hexanone	ug/L (ppb)	50	91	90	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	110	103	70-130	7
Tetrachloroethene	ug/L (ppb)	10	99	98	70-130	1
Dibromochloromethane	ug/L (ppb)	10	106	101	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	109	107	70-130	2
Chlorobenzene	ug/L (ppb)	10	98	99	70-130	1
Ethylbenzene	ug/L (ppb)	10	99	98	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	96	70-130	0
m,p-Xylene	ug/L (ppb)	20	96	96	70-130	0
o-Xylene	ug/L (ppb)	10	92	91	70-130	1
Styrene	ug/L (ppb)	10	91	88	70-130	3
Isopropylbenzene	ug/L (ppb)	10	90	90	70-130	0
Bromoform	ug/L (ppb)	10	119	111	69-138	7
n-Propylbenzene	ug/L (ppb)	10	107	104	70-130	3
Bromobenzene	ug/L (ppb)	10	105	103	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	126	122	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	118	114	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	104	100	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	102	100	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	107	104	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	99	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	104	103	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	106	105	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	103	101	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	102	100	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	119	117	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	99	105	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	100	111	70-130	10
Naphthalene	ug/L (ppb)	10	113	119	70-130	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	106	114	70-130	7

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	66	64	50-104	3
2-Methylnaphthalene	ug/L (ppb)	5	71	69	52-113	3
1-Methylnaphthalene	ug/L (ppb)	5	69	67	51-115	3
Acenaphthylene	ug/L (ppb)	5	80	78	60-114	3
Acenaphthene	ug/L (ppb)	5	77	76	57-110	1
Fluorene	ug/L (ppb)	5	84	84	61-115	0
Phenanthrene	ug/L (ppb)	5	84	86	63-113	2
Anthracene	ug/L (ppb)	5	86	89	65-117	3
Fluoranthene	ug/L (ppb)	5	92	95	68-121	3
Pyrene	ug/L (ppb)	5	88	90	62-133	2
Benz(a)anthracene	ug/L (ppb)	5	89	94	66-131	5
Chrysene	ug/L (ppb)	5	91	95	66-129	4
Benzo(a)pyrene	ug/L (ppb)	5	95	101	66-129	6
Benzo(b)fluoranthene	ug/L (ppb)	5	88	92	55-144	4
Benzo(k)fluoranthene	ug/L (ppb)	5	92	99	58-139	7
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	103	105	62-136	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	99	102	55-146	3
Benzo(g,h,i)perylene	ug/L (ppb)	5	97	100	58-137	3

Date of Report: 02/16/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	84	98	35-146	15

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402067

SAMPLE CHAIN OF CUSTODY

02/06/24

VW4/KS/F31

Page # ____ of ____

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0260475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

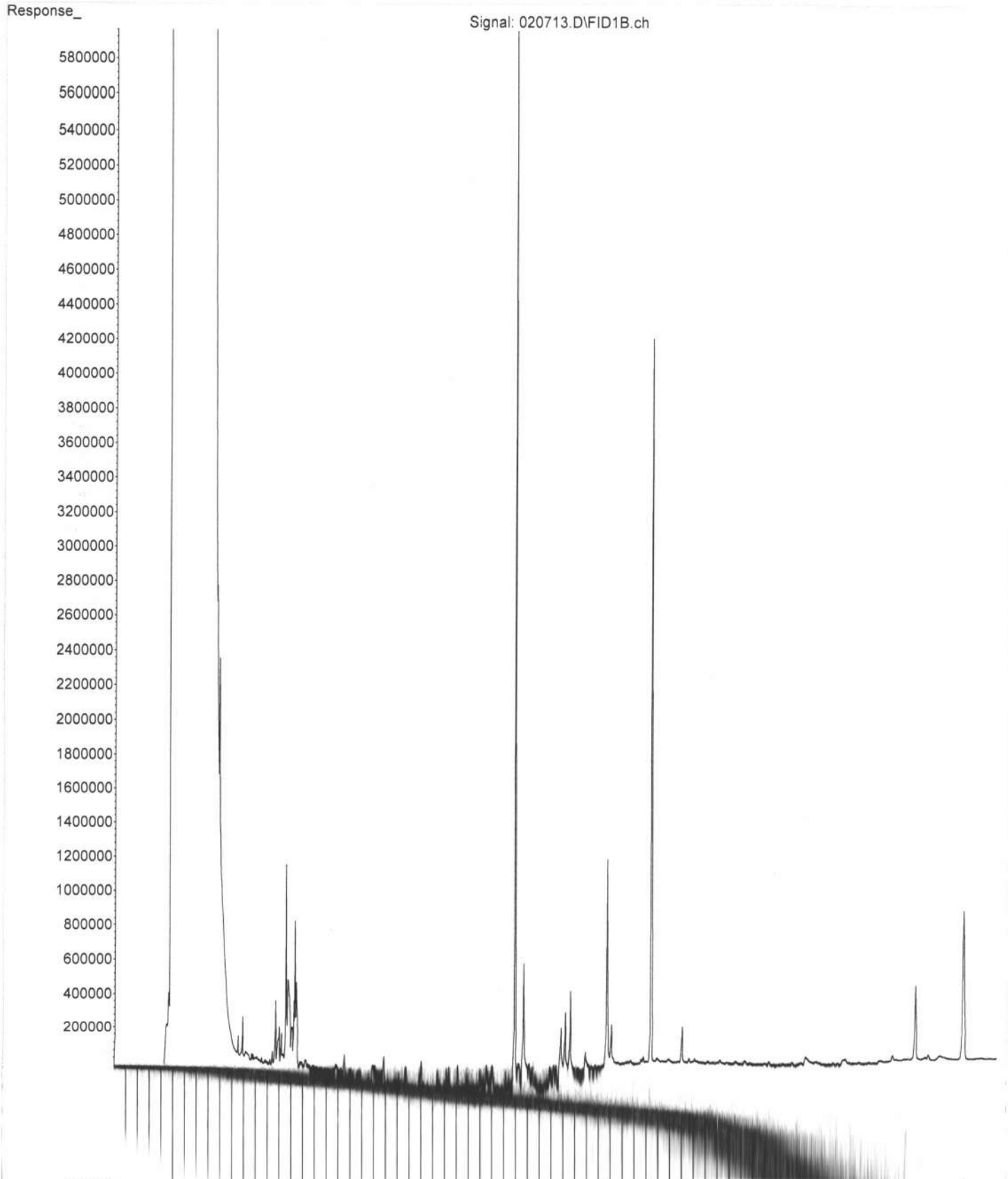
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	Geochemical ~~NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~CVOCs PCBs EPA 8082~~	NwTPH-Dx w/ Silica gel cleanup	TOC	TSS	Tot, Dis As+Pb	Notes
MW-1S	01 A-G	4/5/24	1430	water	7	X	X	X				X	X				Geochemical
MW-3S	02 A-G	↓	1200	↓	7	X	X	X				X	X				parameters:
MW-22D	03 A-O	↓	1540	↓	17	X	X		X	X	X		X	X	X	X	nitrate, nitrite
MW-23D	~~DUP~~ 04 A-O	↓	1240	↓	16	X	X		X	X	X		X	X	X	X	ammonia, chloride
																	sulfate, alkalinity
																	sulfide, MEE
																	dissolved ~~coal~~
																	manganese
																	include Dx, -O
																	chromatograms

NO Fe per HG 2/7/24 ME

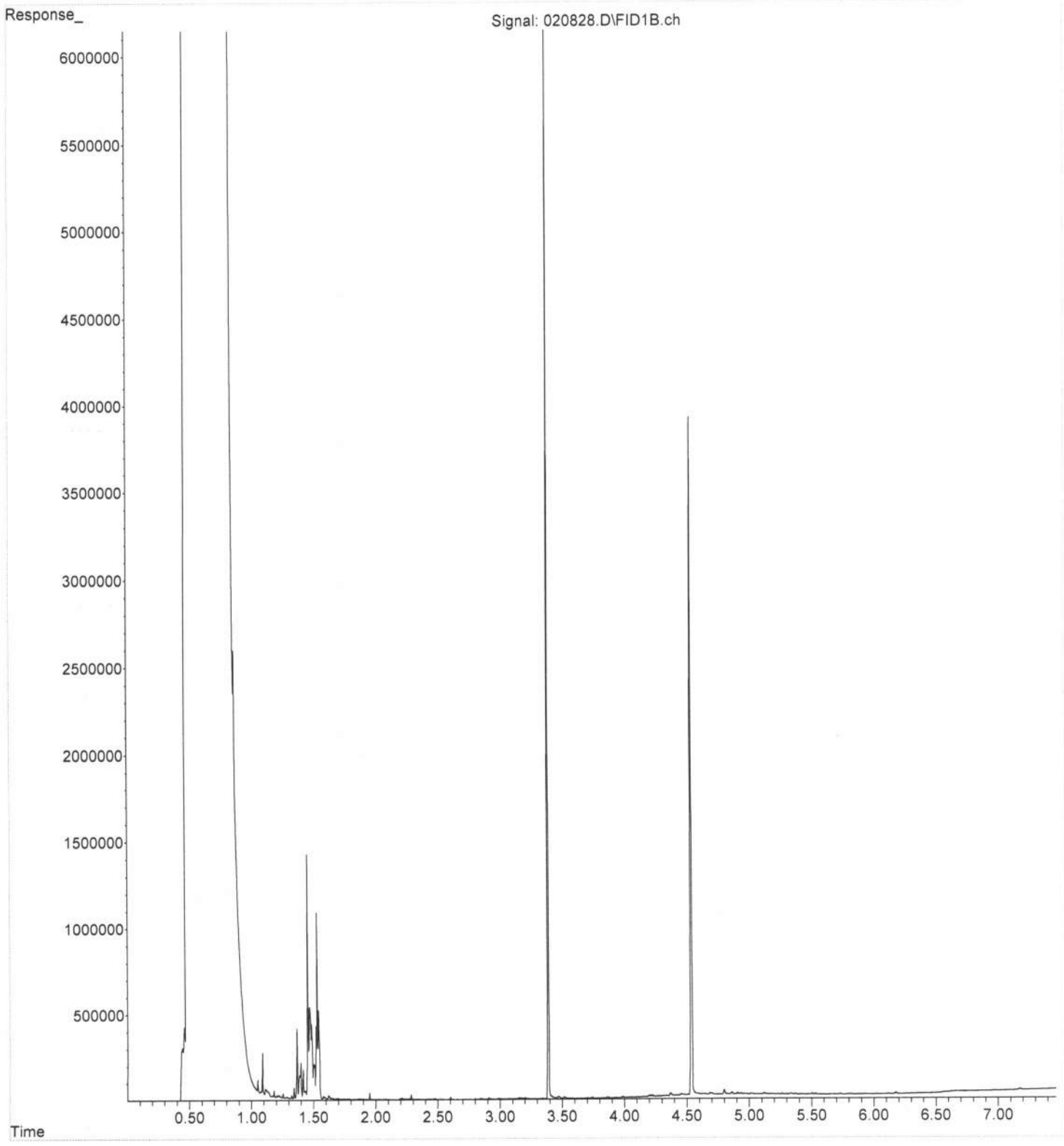
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	4/6/24	1220
Received by: HONG	HONG NGUYEN	FBI	4/6/24	12:20
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

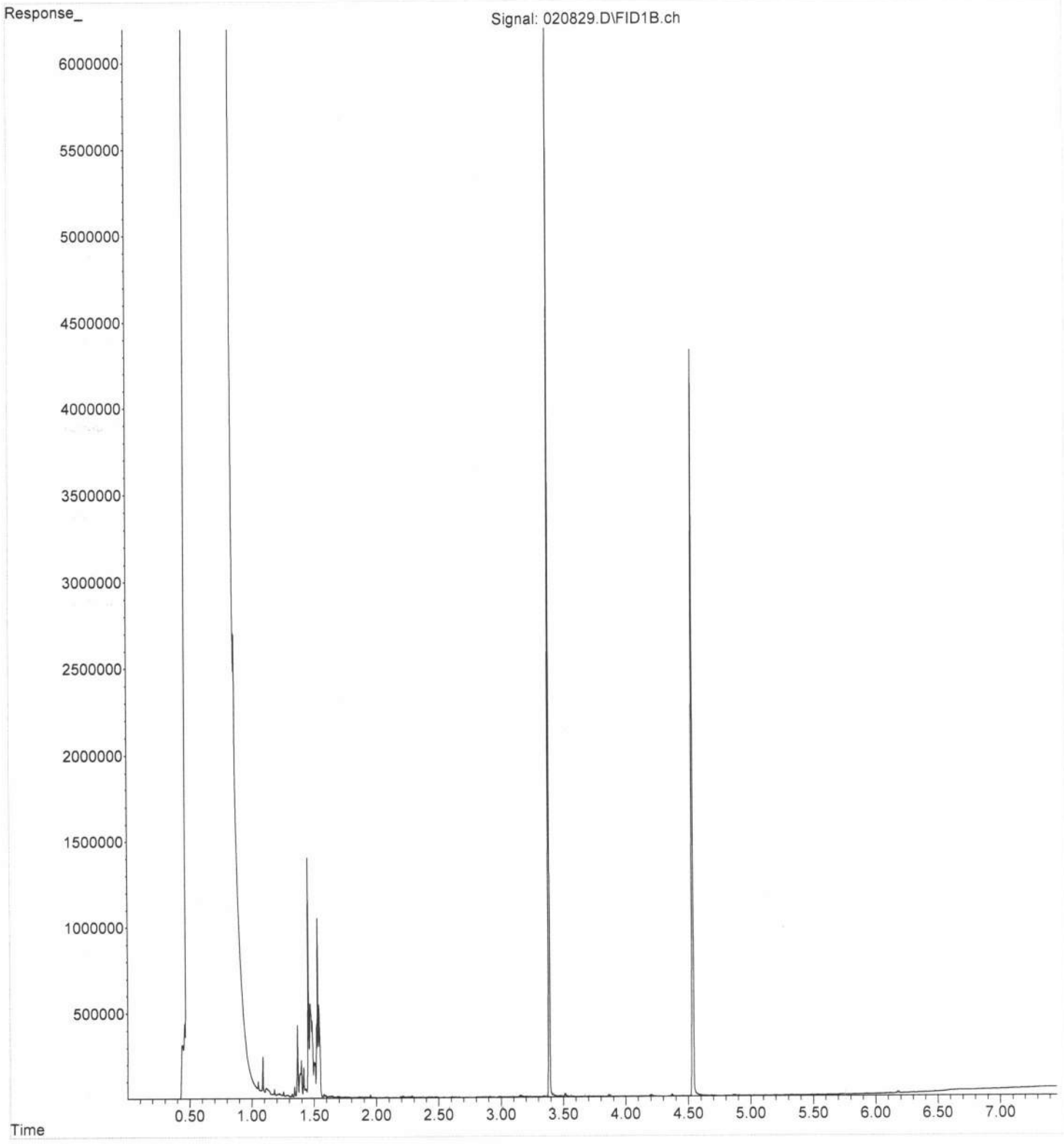
File :P:\Proc_GC14\02-07-24\020713.D
Operator : TL
Acquired : 07 Feb 2024 03:29 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01
Misc Info : ERR
Vial Number: 13



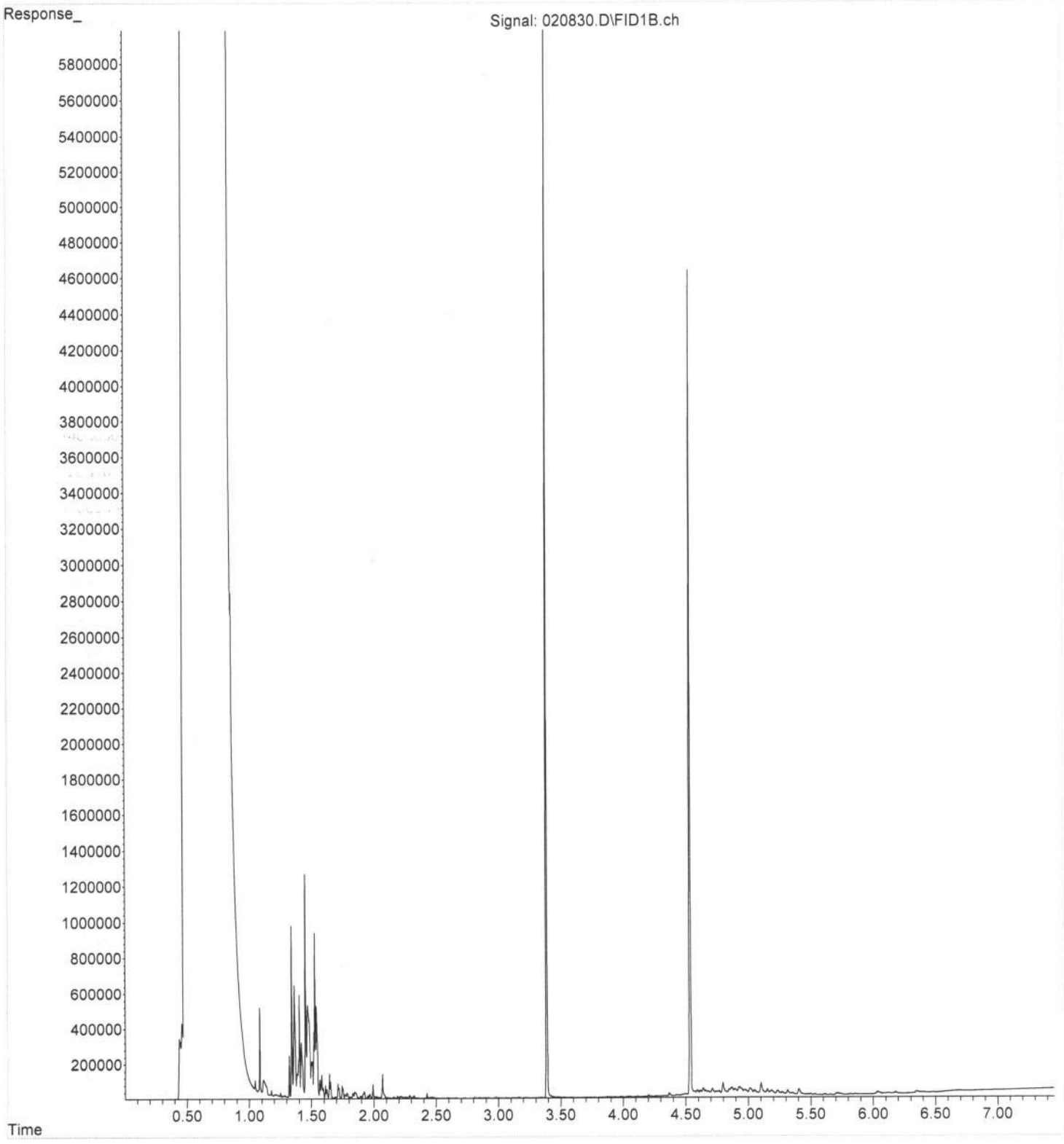
File :P:\Proc_GC14\02-08-24\020828.D
Operator : TL
Acquired : 08 Feb 2024 05:08 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01 sg
Misc Info : ERR
Vial Number: 23



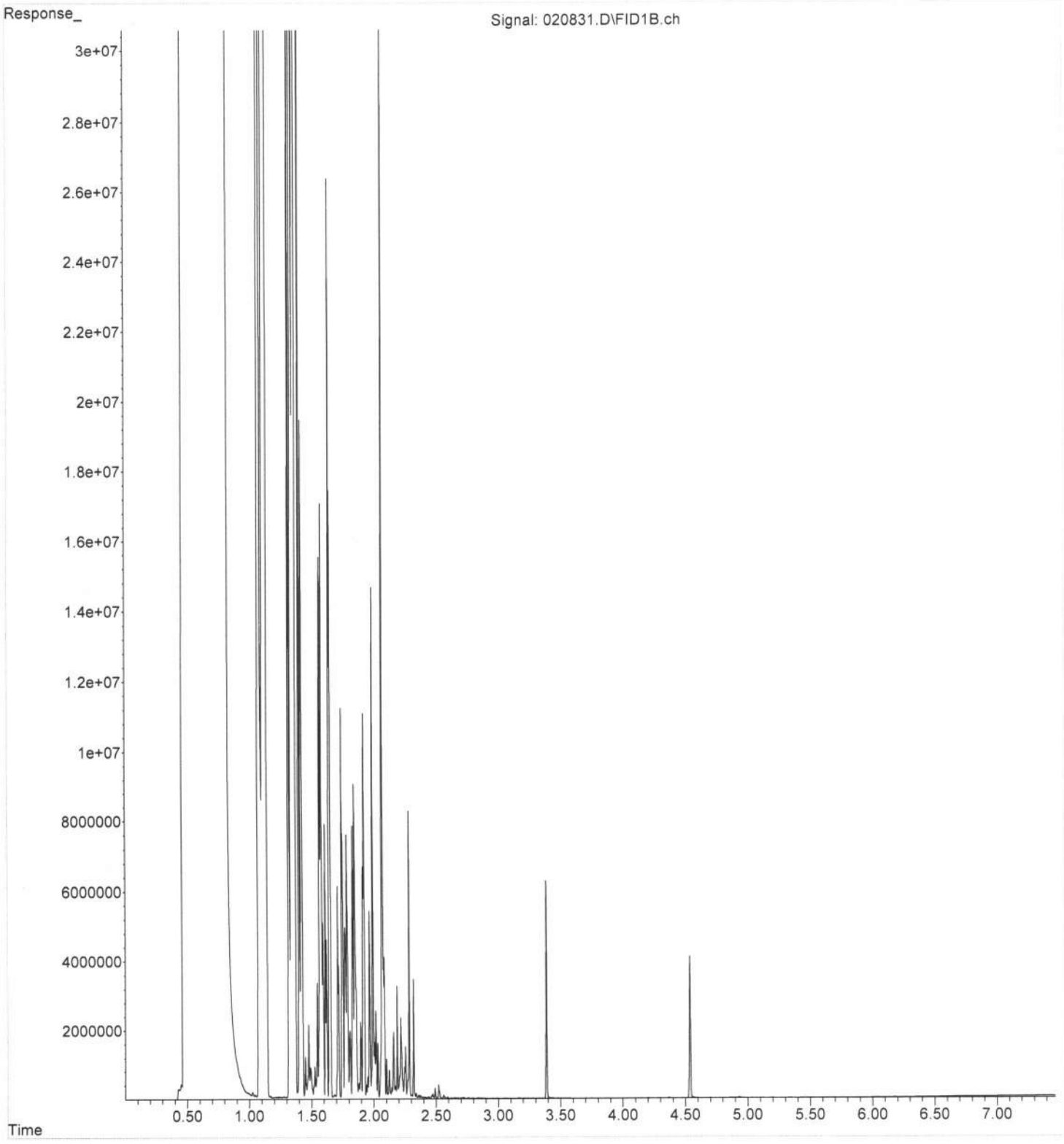
File :P:\Proc_GC14\02-08-24\020829.D
Operator : TL
Acquired : 08 Feb 2024 05:20 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-02 sg
Misc Info : ERR
Vial Number: 24



File :P:\Proc_GC14\02-08-24\020830.D
Operator : TL
Acquired : 08 Feb 2024 05:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-03 sg
Misc Info : ERR
Vial Number: 25

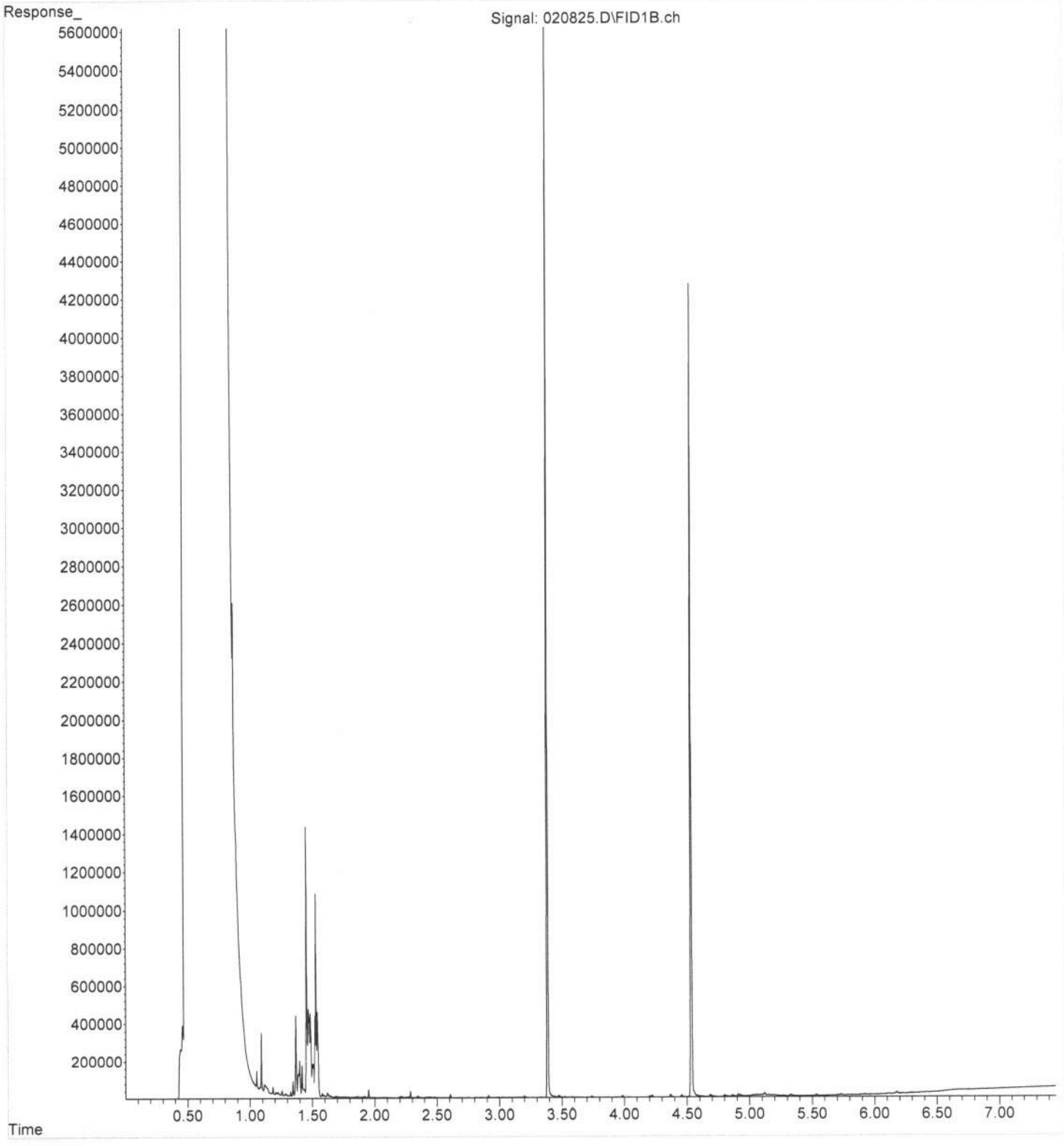


File :P:\Proc_GC14\02-08-24\020831.D
Operator : TL
Acquired : 08 Feb 2024 05:43 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-04 sg
Misc Info : ERR
Vial Number: 26

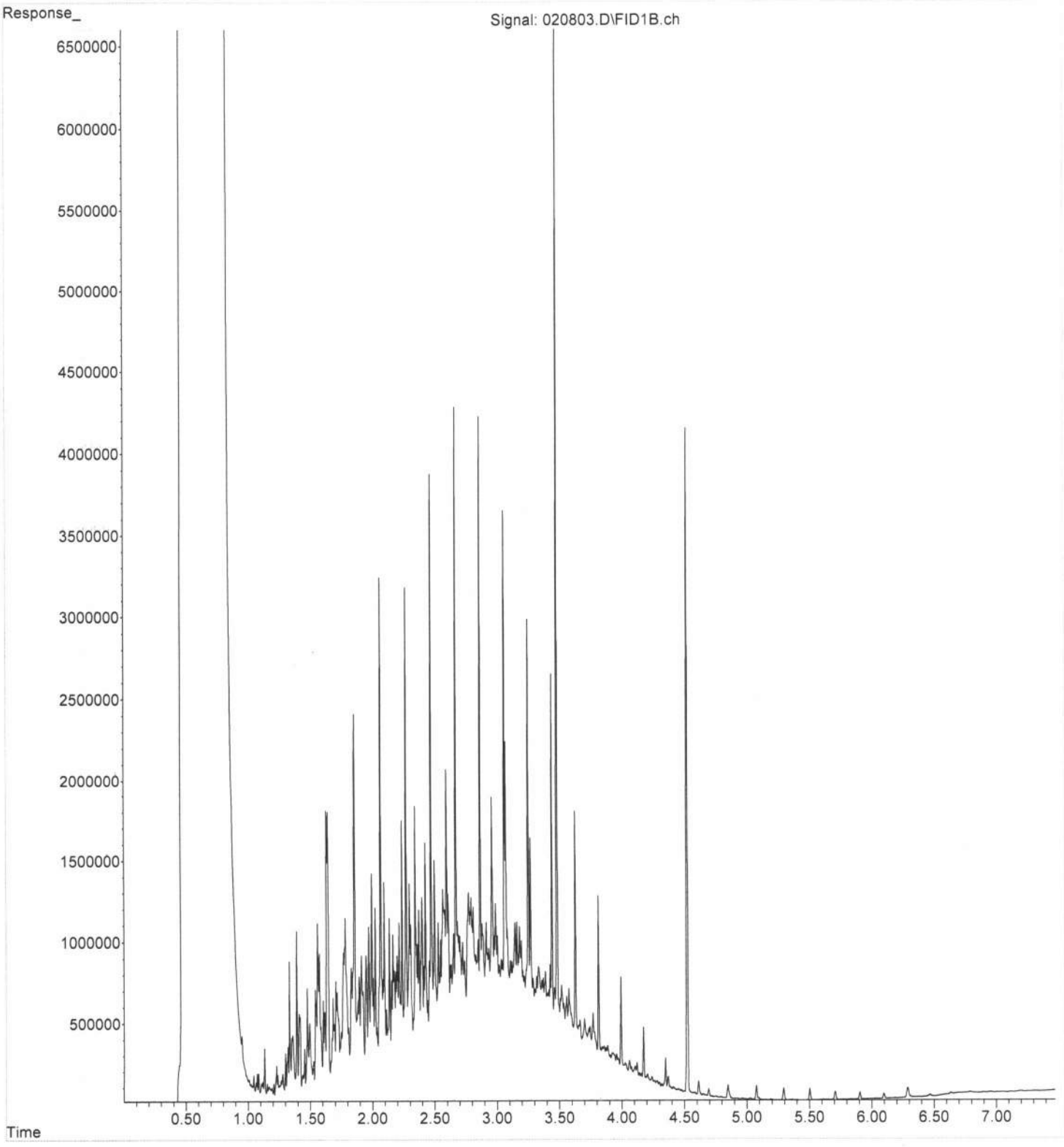


File :P:\Proc_GC14\02-08-24\020825.D
Operator : TL
Acquired : 08 Feb 2024 04:33 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-325 mb sg
Misc Info :
Vial Number: 20

ERR



File :P:\Proc_GC14\02-08-24\020803.D
Operator : TL
Acquired : 08 Feb 2024 09:00 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402067
Work Order Number: 2402085

February 13, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/13/2024*

CLIENT: Friedman & Bruya
Project: 402067
Work Order: 2402085

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402085-001	MW-22D	02/05/2024 3:40 PM	02/06/2024 3:40 PM
2402085-002	MW-23D	02/05/2024 12:40 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402085**
Date: **2/13/2024**

CLIENT: Friedman & Bruya
Project: 402067

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-001 **Collection Date:** 2/5/2024 3:40:00 PM
Client Sample ID: **MW-22D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/12/2024 12:59:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 12:59:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 12:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	6.32	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:25:00 AM
Sulfate	7.03	3.00	D	mg/L	5	2/7/2024 12:25:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.48	0.700		mg/L	1	2/8/2024 9:12:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	147	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:42:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	ND	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-002 **Collection Date:** 2/5/2024 12:40:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	0.0599	0.00675		mg/L	1	2/12/2024 1:02:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 1:02:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 1:02:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	27.1	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:48:00 AM
Sulfate	ND	3.00	D	mg/L	5	2/7/2024 12:48:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	11.3	0.700		mg/L	1	2/8/2024 9:45:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	244	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:47:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.0672	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89571**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MBLKW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89571**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **LCSW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	86.2	126.2				

Sample ID: **2402085-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MW-22D**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	153	2.50						146.5	4.54	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **MBLKW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **LCSW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869932**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869934**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869935**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42841**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **MBLKW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867805**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42841**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **LCSW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867806**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.736	0.120	0.7500	0	98.1	90	110				
Nitrite (as N)	0.716	0.120	0.7500	0	95.5	90	110				
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Sulfate	3.57	0.600	3.750	0	95.1	90	110				

Sample ID: **2401588-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867808**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.211	0.120						0.2080	1.43	20	
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.162	0.100						0.1600	1.24	20	
Sulfate	ND	0.600						0		20	

Sample ID: **2401588-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.5	0.120	0.7500	0.2080	4,180	80	120				ES
Nitrite (as N)	0.735	0.120	0.7500	0	98.0	80	120				
Nitrate (as N)	1.06	0.100	0.7500	0.1600	120	80	120				S

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2401588-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	9.73	0.600	3.750	0.2550	253	80	120				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2401588-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867810**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.4	0.120	0.7500	0.2080	4,160	80	120	31.53	0.346	20	ES
Nitrite (as N)	0.727	0.120	0.7500	0	96.9	80	120	0.7350	1.09	20	
Nitrate (as N)	1.05	0.100	0.7500	0.1600	119	80	120	1.061	0.947	20	
Sulfate	9.59	0.600	3.750	0.2550	249	80	120	9.733	1.48	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **CCB-D**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2402100-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869477**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/10/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/10/2024**	SeqNo: **1869438**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89591**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **LCSW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870309**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	964	0.00675	1,000	0	96.4	73.6	124				
Ethene	962	0.0146	1,000	0	96.2	76.3	122				
Ethane	1,010	0.0151	1,000	0	101	76.1	123				

Sample ID: **MB-R89591**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **MBLKW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870308**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **BATCH**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	3.33	0.00675						3.177	4.57	30	E
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402085
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402085

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402067	D-661

REMARKS

EIM and EQuIS

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Ammonia	Chloride	RSK-175	Sulfate	Alkalinity	Sulfide	TOC		Notes
MW-22D		2/5/2024	1540	water	6	x	x	x	x	x	x	x	x	x		
MW-23D		2/5/2024	1240	water	6	x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1245
Received by:		Nathan Koffler	FAI	2/6/24	1540
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 8, 2024 from the Whidbey Marine 0204475, F&BI 402114 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0219R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 8, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475, F&BI 402114 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402114 -01	MW-10D-W
402114 -02	MW-11D-W

All quality control requirements were acceptable.

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-10D-W 402114-01	<1	<1	<1	<3	<100	87
MW-11D-W 402114-02	<1	<1	<1	<3	<100	87
Method Blank 04-206 MB	<1	<1	<1	<3	<100	85

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/16/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-10D-W 402114-01 1/1.2	<60	<300	97
MW-11D-W 402114-02	<50	<250	102
Method Blank 04-336 MB2	<50	<250	114

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114
Date Extracted: 02/09/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-10D-W 402114-01 1/1.2	<60	<300	98
MW-11D-W 402114-02	71 x	<250	99
Method Blank 04-336 MB2	<50	<250	108

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402114-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	92	70-130
Toluene	ug/L (ppb)	50	92	70-130
Ethylbenzene	ug/L (ppb)	50	88	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	98	70-130

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	92	65-151	9

Date of Report: 02/19/24
Date Received: 02/08/24
Project: Whidbey Marine 0204475, F&BI 402114

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	80	92	65-151	14

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 02/08/24 F2/VW1

402114

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME	PO #
Whidbey Marine	0204475
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

Page # 1 of 1

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

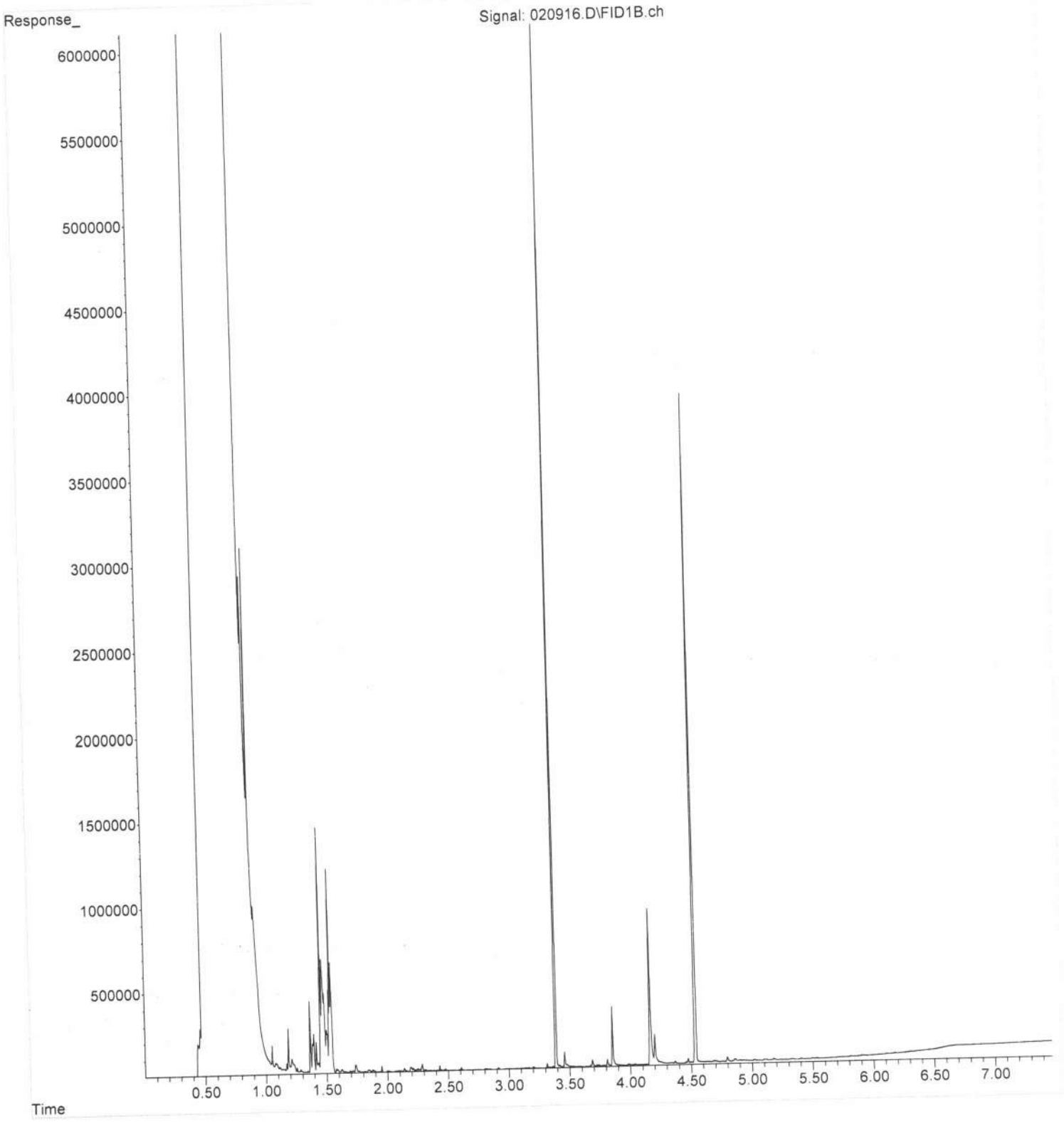
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
MW-10D-W	01 A-G	2/7/24	1245	W	7	X	X	X									For both samples:
MW-11D-W	02 ↓	↓	1125	W	7	X	X	X									DX w/& w/o sgc
																	chromatograms for TPH analyses
							Samples received at 2 °C										

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/8/24	1120
Received by:	ANH PHAN	F&B	02/08/24	11:20
Relinquished by:				
Received by:				

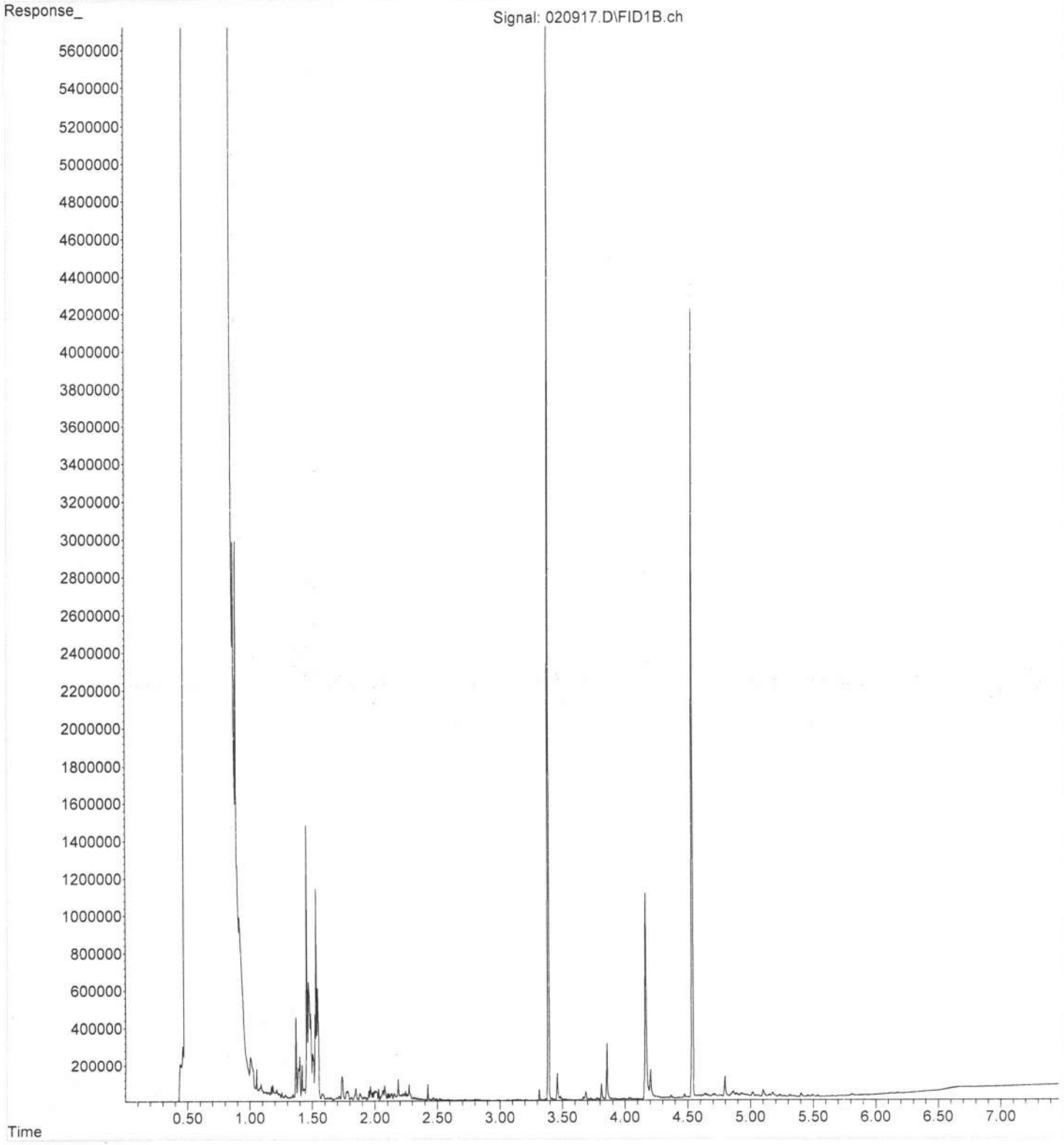
Friedman & Bruya, Inc.
Ph. (206) 285-8282

File :P:\Proc_GC14\02-09-24\020916.D
Operator : TL
Acquired : 09 Feb 2024 11:27 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402114-01 ERR
Misc Info :
Vial Number: 16



File :P:\Proc_GC14\02-09-24\020917.D
Operator : TL
Acquired : 09 Feb 2024 11:38 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402114-02
Misc Info :
Vial Number: 17

ERR



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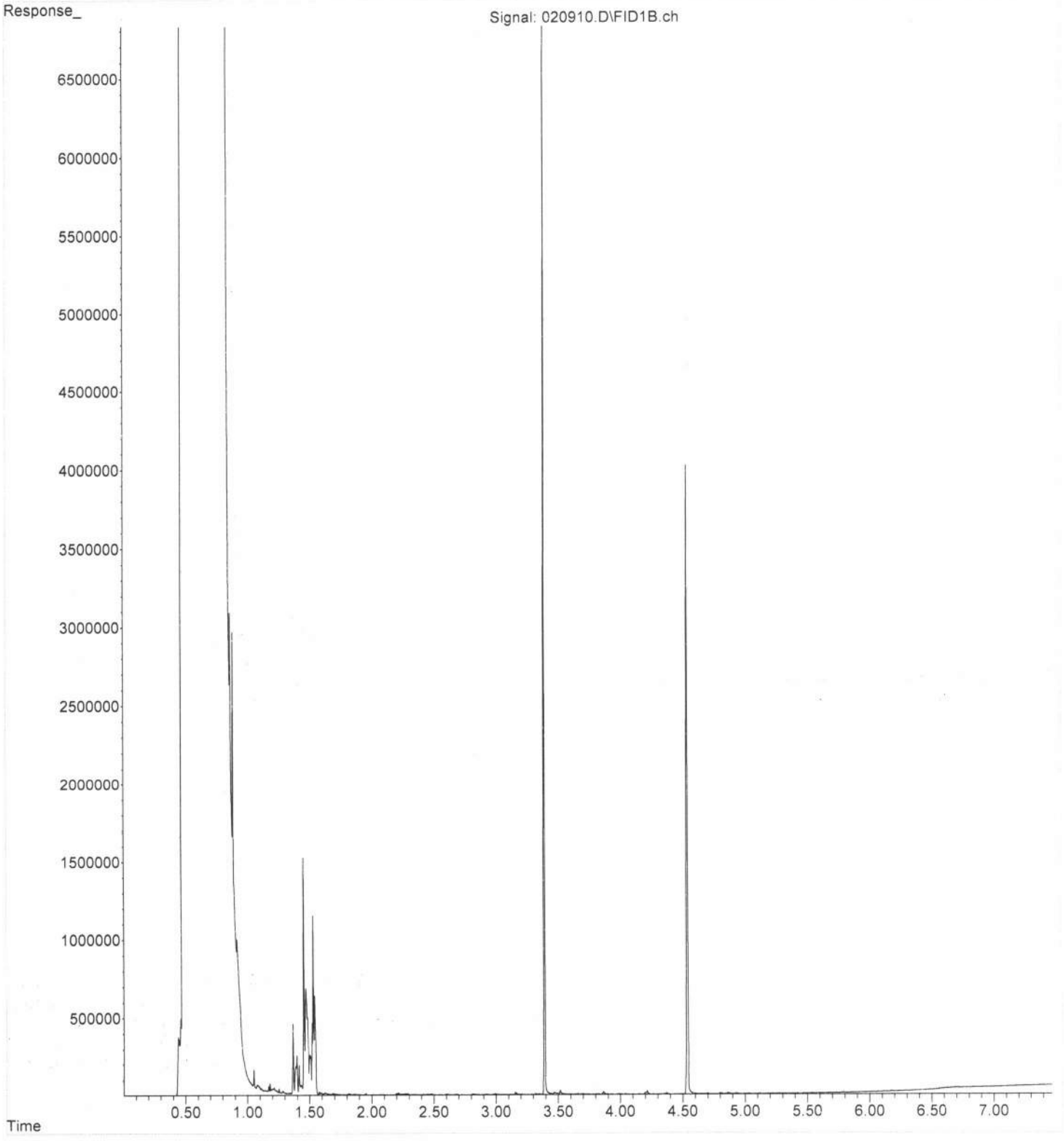
Operator : TL
Acquired : 09 Feb 2024 10:17 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-336 mb2
Misc Info :
Vial Number: 10

ERR



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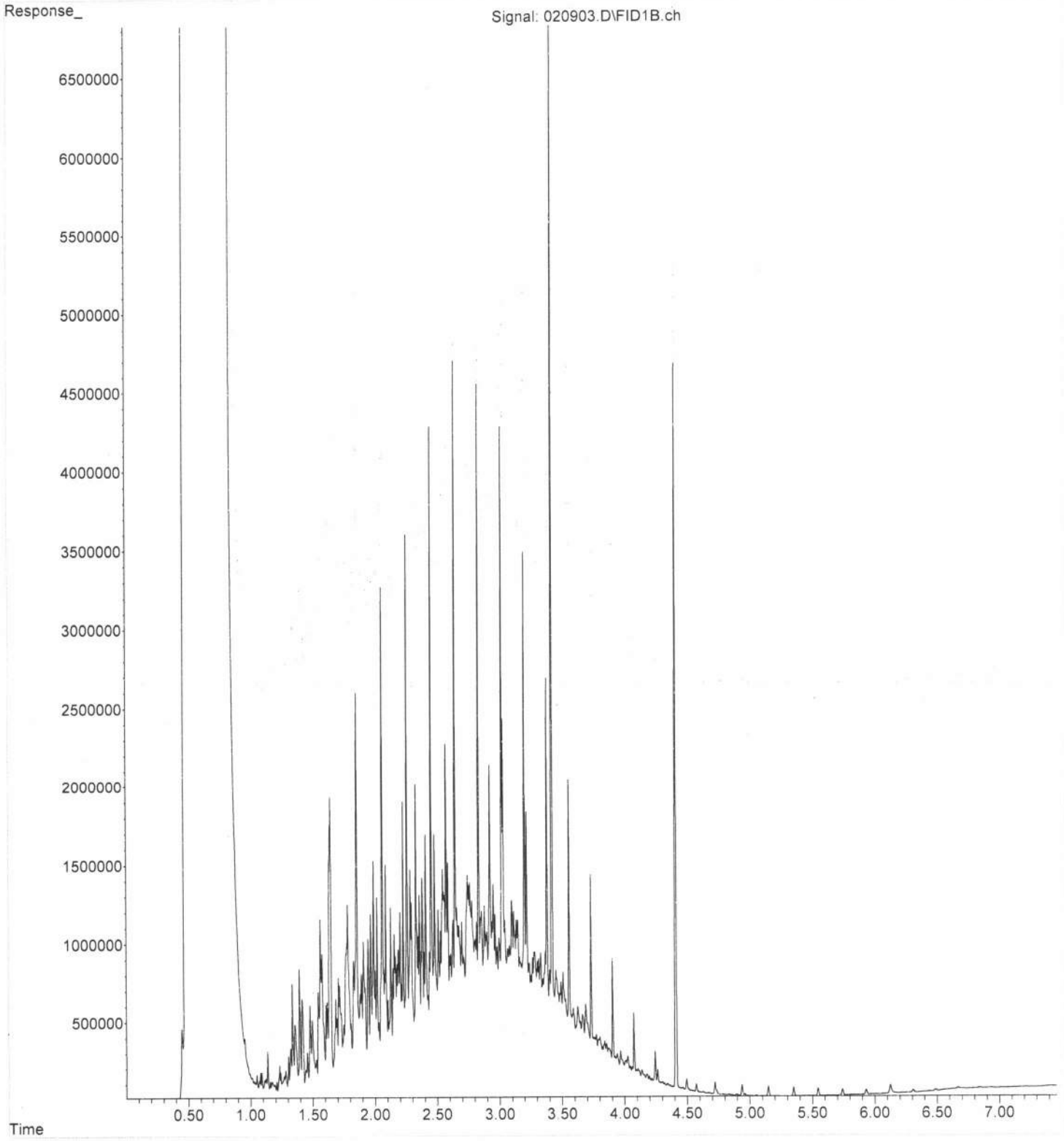
Operator : TL
Acquired : 09 Feb 2024 08:55 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info :
Vial Number: 3

ERR



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 20, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 7, 2024 from the Whidbey Marine 0204475, F&BI 402092 project. There are 39 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0220R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 7, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475, F&BI 402092 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402092 -01	MW-19D-W
402092 -02	MW-20D-W
402092 -03	MW-21D-W
402092 -04	DUP-01
402092 -05	Trip Blank

The samples were sent to Fremont Analytical for TOC, nitrate, nitrite, sulfate, chloride, ammonia, alkalinity, sulfide, and dissolved gases analyses. The report is enclosed.

The dissolved metals samples were filtered at Friedman and Bruya. The data were flagged accordingly.

The 8260D calibration standard did not meet the acceptance criteria for acetone and 2-butanone. The data were flagged accordingly.

The 8270E calibration standard associated with sample MW-19D-W did not meet the acceptance criteria for 2,4,6-tribromophenol surrogate. The data were flagged accordingly.

The NWTPH-Dx diesel calibration standard exceeded the acceptance criteria for the silica gel analysis of samples MW-21D-W and DUP-01. No material was detected in that range, therefore this did not represent an out of control condition, and the data were qualified with a "k" qualifier.

All other quality control requirements were acceptable.

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19D-W 402092-01	<100	115
MW-20D-W 402092-02	<100	116
MW-21D-W 402092-03	6,600	135
DUP-01 402092-04	6,100	132
Method Blank 04-203 MB	<100	92

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/16/24 and 02/19/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-19D-W 402092-01	<50	<250	95
MW-20D-W 402092-02	<50	<250	99
MW-21D-W 402092-03	1,400 x	<250 k	103
DUP-01 402092-04	1,500 x	<250 k	95
Method Blank 04-325 MB2	<50	<250	120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/08/24
Date Analyzed: 02/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D-W 402092-01	<50	<250	94
MW-20D-W 402092-02	110 x	<250	94
MW-21D-W 402092-03	1,600 x	<250	103
DUP-01 402092-04	1,600 x	<250	90
Method Blank 04-325 MB2	<50	<250	112

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-19D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/12/24	Data File:	402092-01.071
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	10.9
Lead	<1
Manganese	73.2

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/12/24	Data File:	402092-02.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.61
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02 x100
Date Analyzed:	02/13/24	Data File:	402092-02 x100.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	1,180

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/12/24	Data File:	402092-03.140
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.51
Lead	2.53

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-W f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03 x10
Date Analyzed:	02/12/24	Data File:	402092-03 x10.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	189

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DUP-01 f	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/12/24	Data File:	402092-04.142
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.30
Lead	2.21
Manganese	147

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	I4-100 mb
Date Analyzed:	02/08/24	Data File:	I4-100 mb.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/08/24	Data File:	402092-01.065
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	13.4
Lead	1.15

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	402092-02.198
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.46
Lead	1.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/09/24	Data File:	402092-03.199
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.41
Lead	5.10

Analysis For Total Metals By EPA Method 6020B

Client ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/09/24	Data File:	402092-04.200
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.48
Lead	3.58

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	I4-99 mb
Date Analyzed:	02/08/24	Data File:	I4-99 mb.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-01
Date Analyzed:	02/09/24	Data File:	020911.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	020912.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	107	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	3.3
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.1
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	0.37	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-03 1/10
Date Analyzed:	02/09/24	Data File:	020913.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	101	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	54
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	91
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	360
Hexane	<50	o-Xylene	140
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	28
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	120
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200 ca	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	350
Benzene	<0.35 j	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	94
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	402092-04 1/10
Date Analyzed:	02/09/24	Data File:	020914.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	55
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	84
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	340
Hexane	<50	o-Xylene	130
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	27
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	120
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200 ca	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	340
Benzene	<0.35 j	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	98
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	02/09/24	Lab ID:	04-0311 mb
Date Analyzed:	02/09/24	Data File:	020909.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	78	126
Toluene-d8	93	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35 j	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-01
Date Analyzed:	02/08/24	Data File:	020818.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	86	11	173
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	78 ca	10	140
Terphenyl-d14	77	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	0.028
Pyrene	0.020
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-02
Date Analyzed:	02/09/24	Data File:	020906.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	15	144
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	86	10	142
Terphenyl-d14	92	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.58
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03
Date Analyzed:	02/09/24	Data File:	020907.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74	15	144
2-Fluorobiphenyl	70	25	128
2,4,6-Tribromophenol	87	10	142
Terphenyl-d14	83	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	37 ve
2-Methylnaphthalene	15
1-Methylnaphthalene	9.1
Acenaphthylene	<0.02
Acenaphthene	0.040
Fluorene	0.061
Phenanthrene	0.042
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-W	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-03 1/10
Date Analyzed:	02/09/24	Data File:	020917.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	74 d	15	144
2-Fluorobiphenyl	68 d	25	128
2,4,6-Tribromophenol	89 d	10	142
Terphenyl-d14	79 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	39

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04
Date Analyzed:	02/09/24	Data File:	020910.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	15	144
2-Fluorobiphenyl	69	25	128
2,4,6-Tribromophenol	90	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	39 ve
2-Methylnaphthalene	15
1-Methylnaphthalene	9.5
Acenaphthylene	<0.02
Acenaphthene	0.040
Fluorene	0.063
Phenanthrene	0.040
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	DUP-01	Client:	Haley & Aldrich, Inc
Date Received:	02/07/24	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	402092-04 1/10
Date Analyzed:	02/09/24	Data File:	020918.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69 d	15	144
2-Fluorobiphenyl	67 d	25	128
2,4,6-Tribromophenol	93 d	10	142
Terphenyl-d14	82 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	42

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475
Date Extracted:	02/08/24	Lab ID:	04-0335 mb
Date Analyzed:	02/08/24	Data File:	020811a.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66	15	144
2-Fluorobiphenyl	65	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.04

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092
Date Extracted: 02/15/24
Date Analyzed: 02/16/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-19D-W 402092-01	53
MW-20D-W 402092-02	360
MW-21D-W 402092-03	310
DUP-01 402092-04	160
Method Blank I4-0120 MB	<5

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 402099-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	96	65-151	8

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	10.8	102 b	98 b	75-125	4 b
Lead	ug/L (ppb)	10	<1	86	87	75-125	1
Manganese	ug/L (ppb)	20	76.4	114 b	106 b	75-125	7 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	86	80-120
Lead	ug/L (ppb)	10	89	80-120
Manganese	ug/L (ppb)	20	88	80-120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	13.4	95 b	97 b	75-125	2 b
Lead	ug/L (ppb)	10	1.15	81	78	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	95	80-120
Lead	ug/L (ppb)	10	93	80-120

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	93	30-221
Chloromethane	ug/L (ppb)	10	<10	107	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	102	50-150
Bromomethane	ug/L (ppb)	10	<5	101	50-150
Chloroethane	ug/L (ppb)	10	<1	99	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	83	50-150
Acetone	ug/L (ppb)	50	<50	58	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Hexane	ug/L (ppb)	10	<5	110	50-150
Methylene chloride	ug/L (ppb)	10	<5	102	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	101	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	112	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	10-211
Chloroform	ug/L (ppb)	10	<1	95	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	91	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	99	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	98	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	104	50-150
Benzene	ug/L (ppb)	10	<0.35	104	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	95	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	98	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	100	50-150
Dibromomethane	ug/L (ppb)	10	<1	103	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	106	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
Toluene	ug/L (ppb)	10	<1	102	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	98	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	104	50-150
2-Hexanone	ug/L (ppb)	50	<10	96	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	106	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	104	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	106	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	111	50-150
Chlorobenzene	ug/L (ppb)	10	<1	104	50-150
Ethylbenzene	ug/L (ppb)	10	<1	104	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	<2	101	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	96	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromoform	ug/L (ppb)	10	<5	120	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	107	50-150
Bromobenzene	ug/L (ppb)	10	<1	102	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	103	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	123	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	117	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	105	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	104	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	105	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	102	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	107	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	108	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	105	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	106	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	112	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	107	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	112	50-150
Naphthalene	ug/L (ppb)	10	<1	120	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	118	50-150

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	89	84	46-206	6
Chloromethane	ug/L (ppb)	10	105	99	59-132	6
Vinyl chloride	ug/L (ppb)	10	98	92	64-142	6
Bromomethane	ug/L (ppb)	10	90	88	50-197	2
Chloroethane	ug/L (ppb)	10	96	90	70-130	6
Trichlorofluoromethane	ug/L (ppb)	10	80	84	51-159	5
Acetone	ug/L (ppb)	50	58	52	10-140	11
1,1-Dichloroethene	ug/L (ppb)	10	92	87	64-140	6
Hexane	ug/L (ppb)	10	105	100	54-136	5
Methylene chloride	ug/L (ppb)	10	96	90	43-134	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	93	70-130	5
trans-1,2-Dichloroethene	ug/L (ppb)	10	95	89	70-130	7
1,1-Dichloroethane	ug/L (ppb)	10	97	92	70-130	5
2,2-Dichloropropane	ug/L (ppb)	10	108	97	64-148	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	94	70-130	2
Chloroform	ug/L (ppb)	10	93	86	70-130	8
2-Butanone (MEK)	ug/L (ppb)	50	90	89	47-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	93	70-130	2
1,1,1-Trichloroethane	ug/L (ppb)	10	90	86	70-130	5
1,1-Dichloropropene	ug/L (ppb)	10	93	89	70-130	4
Carbon tetrachloride	ug/L (ppb)	10	103	98	70-130	5
Benzene	ug/L (ppb)	10	100	98	70-130	2
Trichloroethene	ug/L (ppb)	10	91	90	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	92	93	70-130	1
Bromodichloromethane	ug/L (ppb)	10	94	93	70-130	1
Dibromomethane	ug/L (ppb)	10	99	95	70-130	4
4-Methyl-2-pentanone	ug/L (ppb)	50	106	105	68-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	93	95	69-131	2
Toluene	ug/L (ppb)	10	97	93	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	94	90	70-130	4
1,1,2-Trichloroethane	ug/L (ppb)	10	100	97	70-130	3
2-Hexanone	ug/L (ppb)	50	92	86	45-138	7
1,3-Dichloropropane	ug/L (ppb)	10	103	102	70-130	1
Tetrachloroethene	ug/L (ppb)	10	98	94	70-130	4
Dibromochloromethane	ug/L (ppb)	10	102	99	60-148	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	103	70-130	1
Chlorobenzene	ug/L (ppb)	10	97	95	70-130	2
Ethylbenzene	ug/L (ppb)	10	99	94	70-130	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	91	70-130	5
m,p-Xylene	ug/L (ppb)	20	97	92	70-130	5
o-Xylene	ug/L (ppb)	10	93	87	70-130	7
Styrene	ug/L (ppb)	10	93	89	70-130	4
Isopropylbenzene	ug/L (ppb)	10	92	85	70-130	8
Bromoform	ug/L (ppb)	10	115	109	69-138	5
n-Propylbenzene	ug/L (ppb)	10	103	100	70-130	3
Bromobenzene	ug/L (ppb)	10	102	96	70-130	6
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	94	70-130	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	118	113	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	114	109	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	100	95	70-130	5
4-Chlorotoluene	ug/L (ppb)	10	99	96	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	102	98	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	99	94	70-130	5
sec-Butylbenzene	ug/L (ppb)	10	103	98	70-130	5
p-Isopropyltoluene	ug/L (ppb)	10	104	98	70-130	6
1,3-Dichlorobenzene	ug/L (ppb)	10	103	96	70-130	7
1,4-Dichlorobenzene	ug/L (ppb)	10	101	96	70-130	5
1,2-Dichlorobenzene	ug/L (ppb)	10	100	96	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	113	108	70-130	5
1,2,4-Trichlorobenzene	ug/L (ppb)	10	105	96	70-130	9
Hexachlorobutadiene	ug/L (ppb)	10	109	98	70-130	11
Naphthalene	ug/L (ppb)	10	117	107	70-130	9
1,2,3-Trichlorobenzene	ug/L (ppb)	10	110	99	70-130	11

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	66	64	50-104	3
2-Methylnaphthalene	ug/L (ppb)	5	71	69	52-113	3
1-Methylnaphthalene	ug/L (ppb)	5	69	67	51-115	3
Acenaphthylene	ug/L (ppb)	5	80	78	60-114	3
Acenaphthene	ug/L (ppb)	5	77	76	57-110	1
Fluorene	ug/L (ppb)	5	84	84	61-115	0
Phenanthrene	ug/L (ppb)	5	84	86	63-113	2
Anthracene	ug/L (ppb)	5	86	89	65-117	3
Fluoranthene	ug/L (ppb)	5	92	95	68-121	3
Pyrene	ug/L (ppb)	5	88	90	62-133	2
Benz(a)anthracene	ug/L (ppb)	5	89	94	66-131	5
Chrysene	ug/L (ppb)	5	91	95	66-129	4
Benzo(a)pyrene	ug/L (ppb)	5	95	101	66-129	6
Benzo(b)fluoranthene	ug/L (ppb)	5	88	92	55-144	4
Benzo(k)fluoranthene	ug/L (ppb)	5	92	99	58-139	7
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	103	105	62-136	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	99	102	55-146	3
Benzo(g,h,i)perylene	ug/L (ppb)	5	97	100	58-137	3

Date of Report: 02/20/24
Date Received: 02/07/24
Project: Whidbey Marine 0204475, F&BI 402092

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	112	112	35-146	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY 02/07/24 F3/K4/VW2

402092

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: w + w/o Sgc 2/2/7

Page # 1 of 1

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

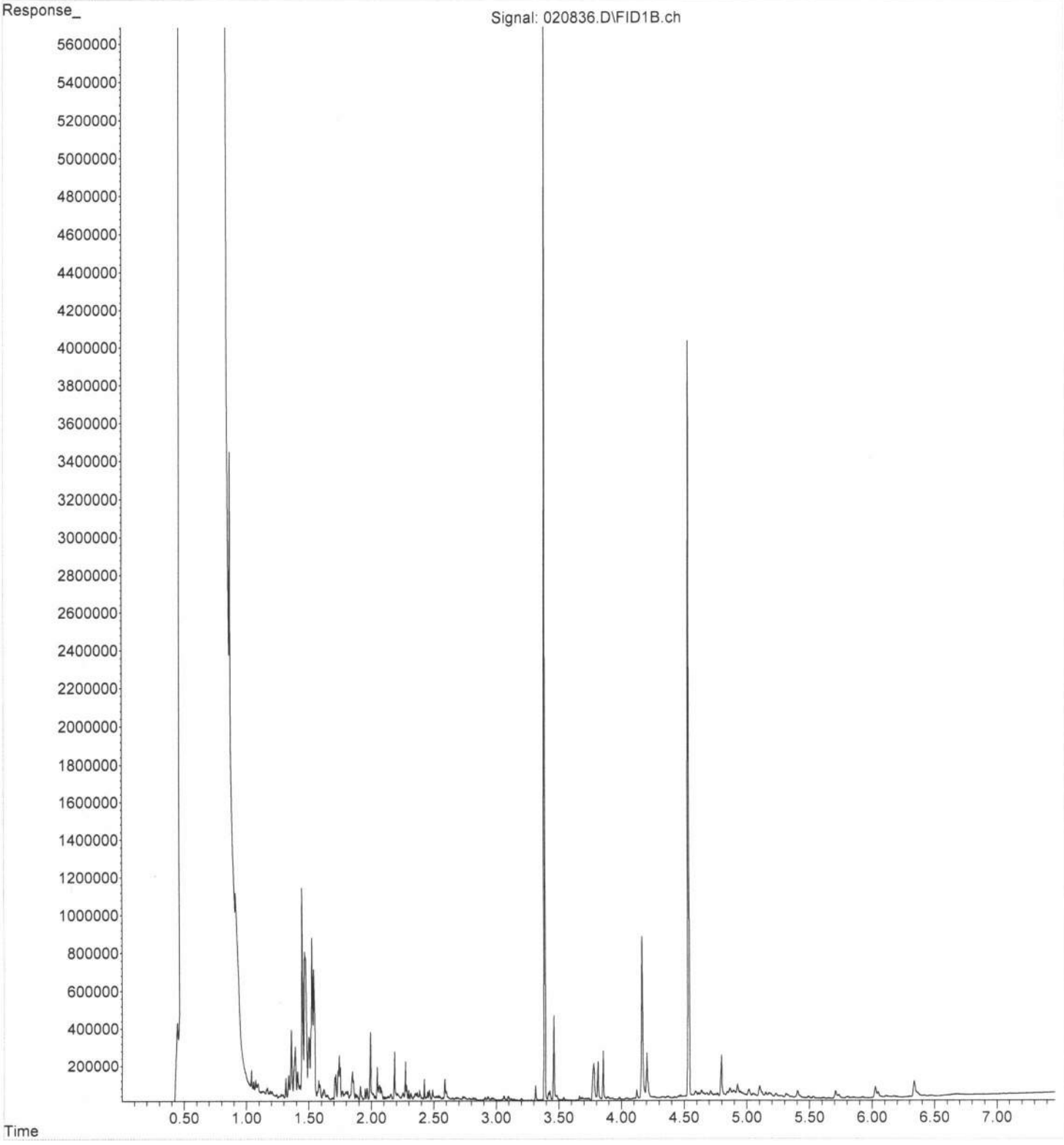
ANALYSES REQUESTED → total & dissolved

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx w/SGC	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	lead & arsenic ~~PCBs EPA 8082~~	TOC	TSS	EDB, EDC, MTBE	Geochem *	Notes
MW-19D-W	01 A-N	2/6/24	1025	W	14	X	X			X	X	X	X	X	X	X	Missing 500mL HCl amber.
MW-20D-W	02 A-O		1425		15												
MW-21D-W	03		1245		15												Provide chromatograms for TPH Analysis for ALL samples
DUP-01	04		1300		15												
Trip Blank AP 02/07	05 A-B	—	—	water	2												anions: *Nitrate, nitrite, chloride, sulfate, Ammonia
							Samples received at 2 °C										alkalinity
																	Sulfide methane, ethene, ethane
																	dissolved ferrous manganese

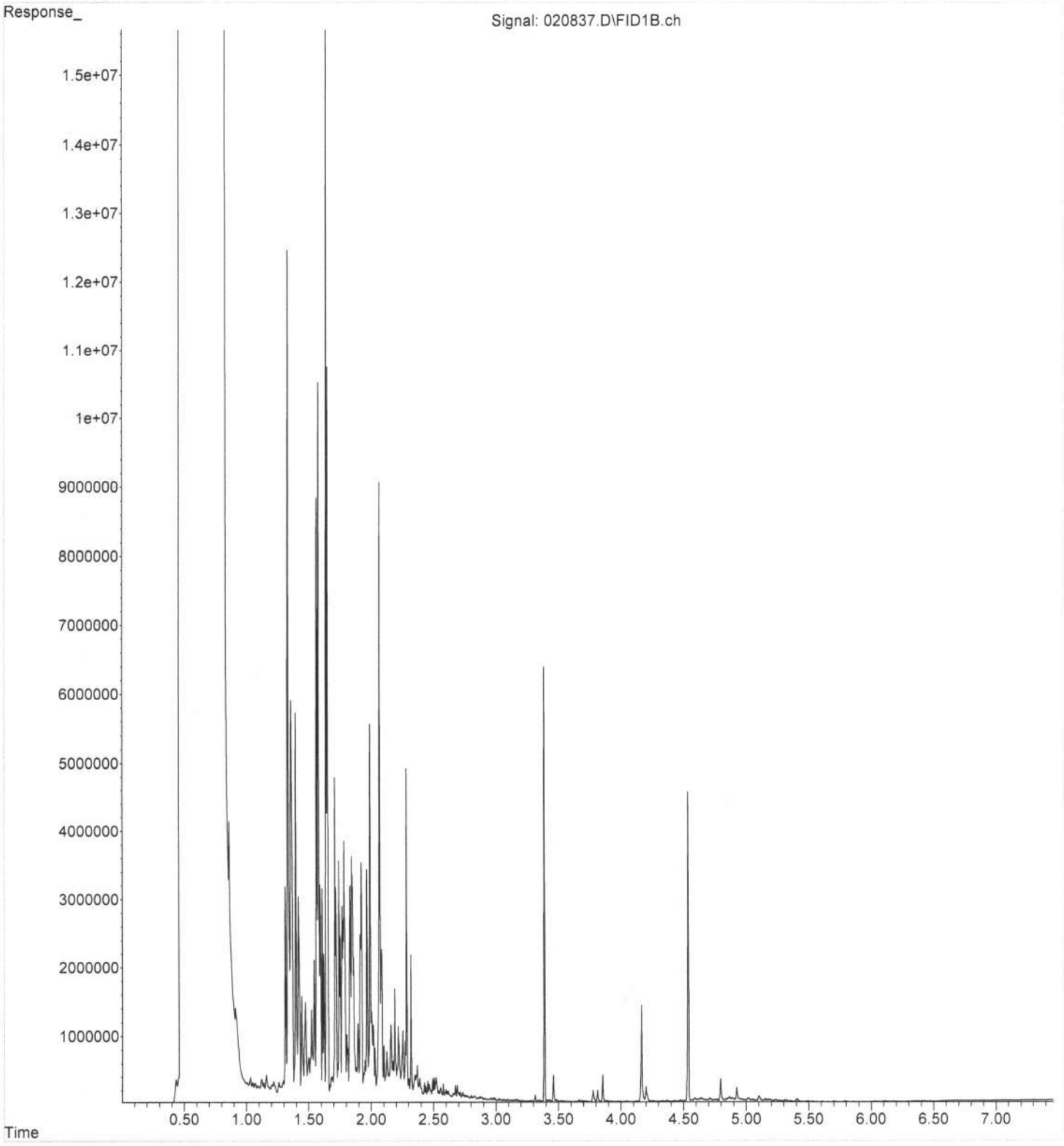
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/6/24	1105
Received by:	Ben Jones	FedEx	2/7/24	1105
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

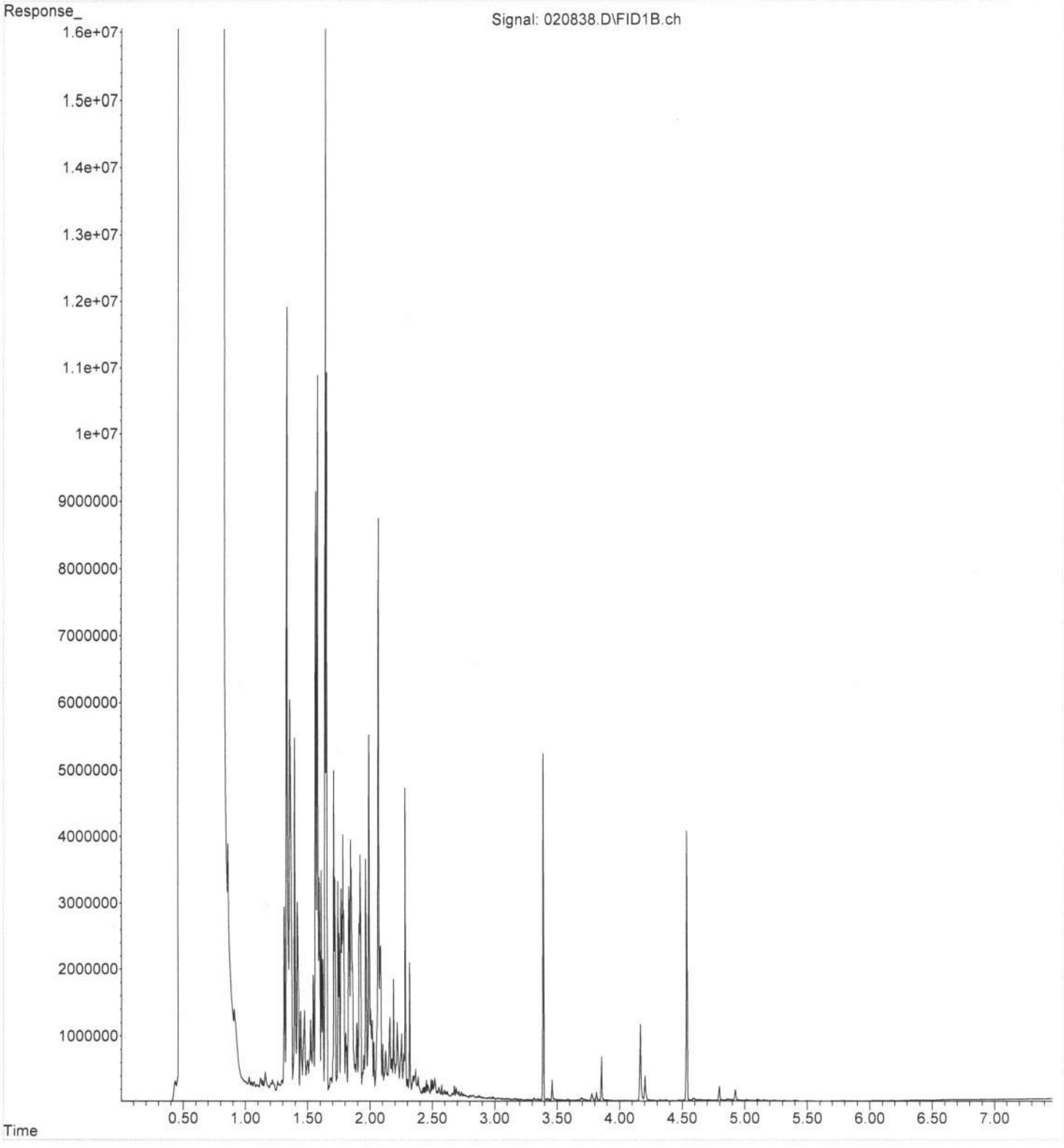
File :P:\Proc_GC14\02-08-24\020836.D
Operator : TL
Acquired : 08 Feb 2024 07:26 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-02
Misc Info : ERR
Vial Number: 29



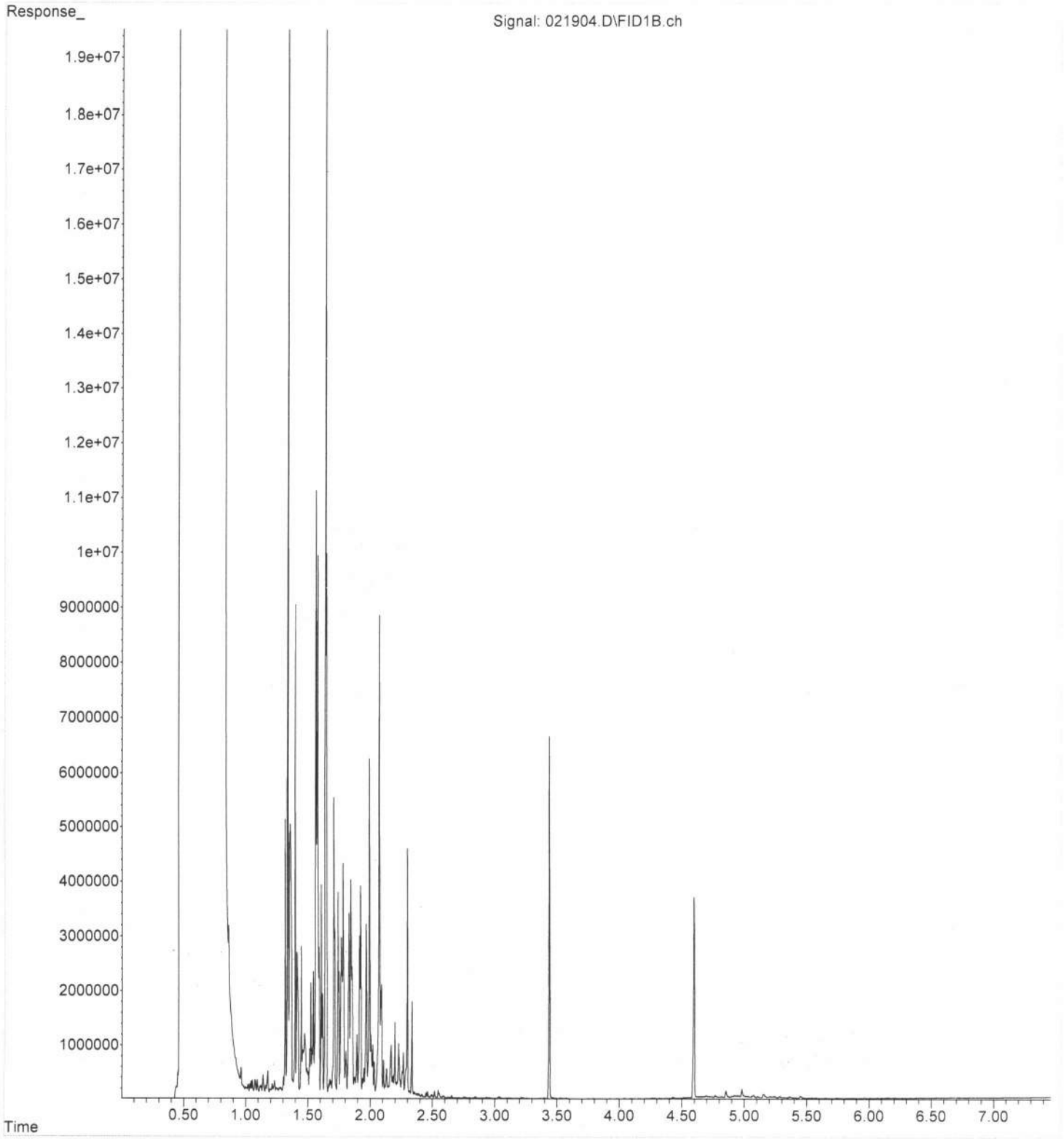
File :P:\Proc_GC14\02-08-24\020837.D
Operator : TL
Acquired : 08 Feb 2024 07:38 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-03
Misc Info : ERR
Vial Number: 30



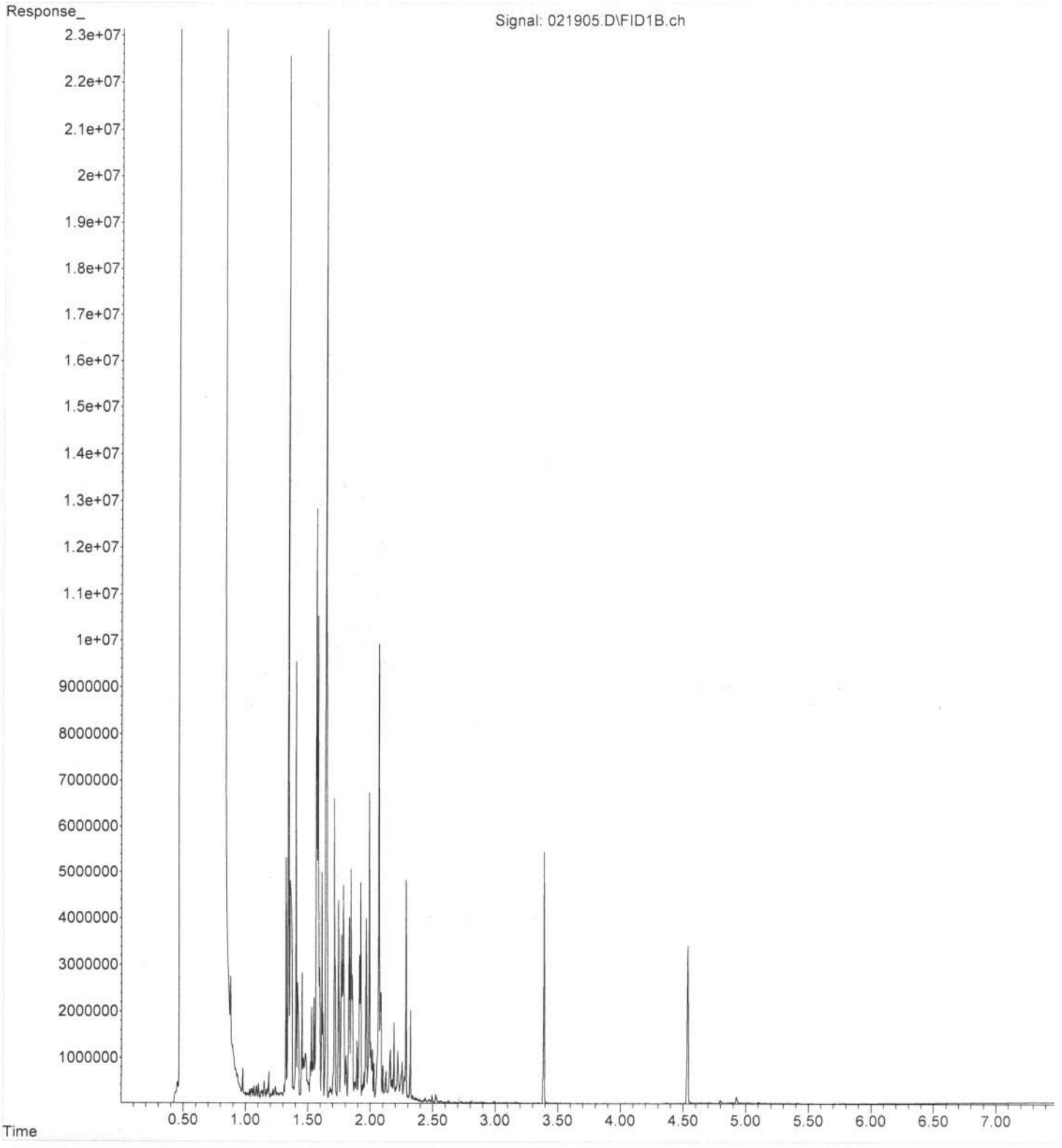
File :P:\Proc_GC14\02-08-24\020838.D
Operator : TL
Acquired : 08 Feb 2024 07:50 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-04
Misc Info : ERR
Vial Number: 31



File :P:\Proc_GC14\02-19-24\021904.D
Operator : TL
Acquired : 19 Feb 2024 08:57 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-03 sg rr
Misc Info : ERR
Vial Number: 6



File :P:\Proc_GC14\02-19-24\021905.D
Operator : TL
Acquired : 19 Feb 2024 09:08 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 402092-04 sg rr
Misc Info : ERR
Vial Number: 7



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402092
Work Order Number: 2402100

February 14, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 2/7/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/14/2024*

CLIENT: Friedman & Bruya
Project: 402092
Work Order: 2402100

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402100-001	MW-19D-W	02/06/2024 10:25 AM	02/07/2024 12:10 PM
2402100-002	MW-20D-W	02/06/2024 2:25 PM	02/07/2024 12:10 PM
2402100-003	MW-21D-W	02/06/2024 12:45 PM	02/07/2024 12:10 PM
2402100-004	DUP-01	02/06/2024 1:00 PM	02/07/2024 12:10 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402100**
Date: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402100**
Date Reported: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-001 **Collection Date:** 2/6/2024 10:25:00 AM
Client Sample ID: **MW-19D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	0.0595	0.00675		mg/L	1	2/13/2024 10:01:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:01:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:01:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	34.8	2.40	D	mg/L	20	2/8/2024 2:44:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 8:43:00 PM
Nitrate (as N)	38.9	2.00	DH	mg/L	20	2/8/2024 2:44:00 PM
Nitrate (as N)	34.7	0.500	DE	mg/L	5	2/7/2024 8:43:00 PM
Sulfate	27.6	3.00	D	mg/L	5	2/7/2024 8:43:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.80	0.700		mg/L	1	2/9/2024 11:35:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	118	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:52:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.205	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-002 **Collection Date:** 2/6/2024 2:25:00 PM
Client Sample ID: **MW-20D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	0.0142	0.00675		mg/L	1	2/13/2024 10:03:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:03:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:03:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	7.94	0.600	D	mg/L	5	2/7/2024 9:06:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:06:00 PM
Nitrate (as N)	1.30	0.500	D	mg/L	5	2/7/2024 9:06:00 PM
Sulfate	9.69	3.00	D	mg/L	5	2/7/2024 9:06:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.62	0.700		mg/L	1	2/10/2024 12:39:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	170	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:07:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.247	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Analytical Report

Work Order: **2402100**
Date Reported: **2/14/2024**

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-003 **Collection Date:** 2/6/2024 12:45:00 PM
Client Sample ID: **MW-21D-W** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/13/2024 10:05:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:05:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:05:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	52.4	2.40	D	mg/L	20	2/8/2024 3:07:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:29:00 PM
Nitrate (as N)	1.37	0.500	D	mg/L	5	2/7/2024 9:29:00 PM
Sulfate	7.48	3.00	D	mg/L	5	2/7/2024 9:29:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	2.14	0.700		mg/L	1	2/10/2024 1:12:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	135	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:12:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.207	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402092

Lab ID: 2402100-004 **Collection Date:** 2/6/2024 1:00:00 PM
Client Sample ID: **DUP-01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89609		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/13/2024 10:09:00 AM
Ethene	ND	0.0146		mg/L	1	2/13/2024 10:09:00 AM
Ethane	ND	0.0151		mg/L	1	2/13/2024 10:09:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 42857		Analyst: FG
Chloride	51.9	2.40	D	mg/L	20	2/8/2024 3:30:00 PM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 9:52:00 PM
Nitrate (as N)	1.37	0.500	D	mg/L	5	2/7/2024 9:52:00 PM
Sulfate	7.46	3.00	D	mg/L	5	2/7/2024 9:52:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	2.23	0.700		mg/L	1	2/10/2024 1:43:00 AM
Total Alkalinity by SM 2320B				Batch ID: R89603		Analyst: SS
Alkalinity, Total (As CaCO3)	138	2.50		mg/L	1	2/14/2024 10:15:37 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 2:34:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.151	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89603**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **MBLKW**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870587**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89603**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **LCSW**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870588**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103	2.50	100.0	0	103	86.2	126.2				

Sample ID: **2402100-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/14/2024**		RunNo: **89603**		
Client ID: **MW-19D-W**	Batch ID: **R89603**					Analysis Date: **2/14/2024**		SeqNo: **1870590**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	112	2.50						117.9	5.26	20	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **MBLKW**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869931**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **LCSW**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869932**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869934**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869935**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89575**		
Client ID: **BATCH**	Batch ID: **42892**					Analysis Date: **2/12/2024**		SeqNo: **1869936**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42857**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **MBLKW**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868986**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42857**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **LCSW**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868987**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.778	0.120	0.7500	0	104	90	110				
Nitrite (as N)	0.769	0.120	0.7500	0	103	90	110				
Nitrate (as N)	0.794	0.100	0.7500	0	106	90	110				
Sulfate	3.89	0.600	3.750	0	104	90	110				

Sample ID: **2402039-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **BATCH**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868994**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	54.3	2.40						56.26	3.51	20	D
Nitrite (as N)	ND	2.40						0		20	D
Nitrate (as N)	ND	2.00						0		20	D
Sulfate	ND	12.0						0		20	D

Sample ID: **2402039-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/7/2024**	RunNo: **89527**
Client ID: **BATCH**	Batch ID: **42857**		Analysis Date: **2/7/2024**	SeqNo: **1868995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	69.7	2.40	15.00	56.26	89.7	80	120				D
Nitrite (as N)	14.9	2.40	15.00	0	99.3	80	120				D
Nitrate (as N)	15.6	2.00	15.00	0.4400	101	80	120				D

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2402039-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/7/2024** RunNo: **89527**
Client ID: **BATCH** Batch ID: **42857** Analysis Date: **2/7/2024** SeqNo: **1868995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	81.1	12.0	75.00	6.240	99.8	80	120				D

Sample ID: **2402039-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/7/2024** RunNo: **89527**
Client ID: **BATCH** Batch ID: **42857** Analysis Date: **2/7/2024** SeqNo: **1868996**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	71.5	2.40	15.00	56.26	102	80	120	69.72	2.52	20	D
Nitrite (as N)	15.4	2.40	15.00	0	103	80	120	14.90	3.56	20	D
Nitrate (as N)	16.1	2.00	15.00	0.4400	104	80	120	15.56	3.16	20	D
Sulfate	84.3	12.0	75.00	6.240	104	80	120	81.06	3.90	20	D

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **BATCH**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2402100-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/9/2024**		RunNo: **89535**		
Client ID: **MW-19D-W**	Batch ID: **R89535**					Analysis Date: **2/9/2024**		SeqNo: **1869477**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/10/2024**		RunNo: **89535**		
Client ID: **MW-19D-W**	Batch ID: **R89535**					Analysis Date: **2/10/2024**		SeqNo: **1869438**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402100
CLIENT: Friedman & Bruya
Project: 402092

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89609**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **LCSW**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870671**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,070	0.00675	1,000	0	107	73.6	124				
Ethene	1,040	0.0146	1,000	0	104	76.3	122				
Ethane	1,060	0.0151	1,000	0	106	76.1	123				

Sample ID: **MB-R89609**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **MBLKW**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870670**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-007DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89609**
Client ID: **BATCH**	Batch ID: **R89609**		Analysis Date: **2/13/2024**	SeqNo: **1870653**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	6.50	0.00675						5.420	18.1	30	E
Ethene	0.116	0.0146						0	200	30	
Ethane	0.153	0.0151						0	200	30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402100
Logged by:	Morgan Wilson	Date Received:	2/7/2024 12:10:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ H2SO4
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402100

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.	PO #
402092	D-668

REMARKS

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate Nitrite	Sulfate	Ammonia	Chloride	Sulfide	Alkalinity	Dissolved RSK Gasses	TOC				Notes
MW-19D-W		2/6/24	1025	W	7	X	←				→	X	X				
MW-20D-W			1425	W	7	X	←				→	X	X				
MW-21D-W			1245	W	7	X	←				→	X	X				
DUP-01			1300	W	7	X	←				→	X	X				
~~Trip Blank~~	~~EP~~	N															

Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	~~Michael Erdahl~~ Eric Sauer	Friedman & Bruya	2/7/24	1130
Seattle, WA 98119-2029	Received by:	Nathan Hoffer	FAI	2/7/24	1210
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 21, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on February 1, 2024 from the Whidbey Marine 0204475-001, F&BI 402019 project. There are 31 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0221R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 1, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402019 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402019 -01	HA-4-S1
402019 -02	HA-4-S2
402019 -03	HA-4-S3
402019 -04	HA-4-S4
402019 -05	HA-4-S5
402019 -06	HA-4-S6

Samples HA-4-S2, HA-4-S4, and HA-4-S6 were sent to Fremont Analytical for total organic carbon analysis. In addition, sample HA-4-S4 was sent to Fremont for EPH and VPH analyses. The reports are enclosed.

The 8260D acetone calibration standard did not meet the acceptance criteria. The data were flagged accordingly.

The 8270E calibration standard failed the acceptance criteria for nitrobenzene-d5 surrogate. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: NA
Date Analyzed: 02/02/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-4-S1 402019-01	3
HA-4-S2 402019-02	5
HA-4-S3 402019-03	8
HA-4-S4 402019-04	12
HA-4-S5 402019-05	7
HA-4-S6 402019-06	15

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/05/24
Date Analyzed: 02/05/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-4-S1 402019-01	<5	134
HA-4-S2 402019-02	<5	134
HA-4-S3 402019-03	<5	133
HA-4-S4 402019-04 1/10	700	183
HA-4-S6 402019-06	9.1	140
Method Blank 04-199 MB	<5	132

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/05/24
Date Analyzed: 02/05/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-4-S5 402019-05	<0.02	<0.02	<0.02	<0.06	<5	115
Method Blank 04-199 MB	<0.02	<0.02	<0.02	<0.06	<5	116

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019
Date Extracted: 02/02/24
Date Analyzed: 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-4-S1 402019-01	<50	<250	90
HA-4-S2 402019-02	<50	<250	88
HA-4-S3 402019-03	<50	<250	87
HA-4-S4 402019-04	<50	<250	90
HA-4-S5 402019-05	<50	<250	88
HA-4-S6 402019-06	<50	<250	87
Method Blank 04-291 MB	<50	<250	93

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-01
Date Analyzed:	02/02/24	Data File:	402019-01.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.57
Lead	2.92

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-02
Date Analyzed:	02/02/24	Data File:	402019-02.096
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.57
Lead	1.26

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-03
Date Analyzed:	02/02/24	Data File:	402019-03.097
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.30
Lead	1.78

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-04
Date Analyzed:	02/02/24	Data File:	402019-04.098
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.26
Lead	1.26

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-06
Date Analyzed:	02/02/24	Data File:	402019-06.099
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.98
Lead	1.97

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	I4-80 mb2
Date Analyzed:	02/02/24	Data File:	I4-80 mb2.038
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-01 1/0.5
Date Analyzed:	02/06/24	Data File:	020619.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-02 1/0.5
Date Analyzed:	02/06/24	Data File:	020620.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	84	120
Toluene-d8	96	73	128
4-Bromofluorobenzene	105	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-03 1/0.5
Date Analyzed:	02/06/24	Data File:	020621.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	100	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0024
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.018
Hexane	<0.25	o-Xylene	0.0040
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	0.0014	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.012	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-04 1/0.5
Date Analyzed:	02/06/24	Data File:	020622.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	84	120
Toluene-d8	110	73	128
4-Bromofluorobenzene	119	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0098
Hexane	2.8	o-Xylene	0.0013
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	0.068
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.26
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.18
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.33
Benzene	<0.001	sec-Butylbenzene	0.49
Trichloroethene	<0.002	p-Isopropyltoluene	0.21
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0046	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S5	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-05 1/0.5
Date Analyzed:	02/06/24	Data File:	020623.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	84	120
Toluene-d8	100	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	402019-06 1/0.5
Date Analyzed:	02/06/24	Data File:	020624.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	84	120
Toluene-d8	104	73	128
4-Bromofluorobenzene	98	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.52
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	2.1
Hexane	<0.25	o-Xylene	0.80
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	0.11
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.18
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.75
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.036	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.36
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/06/24	Lab ID:	04-0280 mb 1/0.5
Date Analyzed:	02/06/24	Data File:	020606.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	84	120
Toluene-d8	94	73	128
4-Bromofluorobenzene	101	57	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S1	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-01 1/5
Date Analyzed:	02/05/24	Data File:	020435.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	83	10	198
2-Fluorobiphenyl	87	45	117
2,4,6-Tribromophenol	72	11	158
Terphenyl-d14	101	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S2	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-02 1/5
Date Analyzed:	02/04/24	Data File:	020408.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	83 ca	16	137
2-Fluorobiphenyl	81	46	122
2,4,6-Tribromophenol	66	17	154
Terphenyl-d14	84	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S3	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-03 1/5
Date Analyzed:	02/04/24	Data File:	020409.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	92 ca	16	137
2-Fluorobiphenyl	87	46	122
2,4,6-Tribromophenol	71	17	154
Terphenyl-d14	88	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S4	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-04 1/5
Date Analyzed:	02/04/24	Data File:	020410.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104 ca	16	137
2-Fluorobiphenyl	92	46	122
2,4,6-Tribromophenol	75	17	154
Terphenyl-d14	86	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	0.15
1-Methylnaphthalene	0.065
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.044
Anthracene	0.030
Fluoranthene	0.013
Pyrene	0.026
Benz(a)anthracene	0.027
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-4-S6	Client:	Haley & Aldrich, Inc
Date Received:	02/01/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	402019-06 1/5
Date Analyzed:	02/04/24	Data File:	020412.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	96 ca	16	137
2-Fluorobiphenyl	92	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	87	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.024
2-Methylnaphthalene	0.026
1-Methylnaphthalene	0.011
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/02/24	Lab ID:	04-0292 mb 1/5
Date Analyzed:	02/05/24	Data File:	020434.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	91	10	198
2-Fluorobiphenyl	97	45	117
2,4,6-Tribromophenol	73	11	158
Terphenyl-d14	105	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 402019-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	96	70-130
Toluene	mg/kg (ppm)	1.0	95	70-130
Ethylbenzene	mg/kg (ppm)	1.0	100	70-130
Xylenes	mg/kg (ppm)	3.0	103	70-130
Gasoline	mg/kg (ppm)	40	110	70-130

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 402028-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	2,100	88	92	63-146	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	77-123

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402008-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	102	99	75-125	3
Lead	mg/kg (ppm)	50	<5	104	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Lead	mg/kg (ppm)	50	98	80-120

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401389-42 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	39	38	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	75	73	10-126	3
Vinyl chloride	mg/kg (ppm)	2	<0.05	72	66	10-138	9
Bromomethane	mg/kg (ppm)	2	<0.5	60	55	10-163	9
Chloroethane	mg/kg (ppm)	2	<0.5	61	52	10-176	16
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	65	60	10-176	8
Acetone	mg/kg (ppm)	10	<5	74	68	10-163	8
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	75	71	10-160	5
Hexane	mg/kg (ppm)	2	<0.25	69	66	10-137	4
Methylene chloride	mg/kg (ppm)	2	<0.5	70	66	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	84	79	21-145	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	75	72	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	81	75	19-140	8
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	84	78	10-158	7
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	75	74	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	78	75	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	10	<1	78	71	19-147	9
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	83	78	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	78	73	10-156	7
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	76	74	17-140	3
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	80	74	9-164	8
Benzene	mg/kg (ppm)	2	<0.03	78	73	29-129	7
Trichloroethene	mg/kg (ppm)	2	<0.02	76	73	21-139	4
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	81	77	30-135	5
Bromodichloromethane	mg/kg (ppm)	2	<0.05	79	79	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	74	70	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	82	80	24-155	2
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	84	78	28-144	7
Toluene	mg/kg (ppm)	2	<0.05	80	79	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	87	84	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	85	88	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	79	83	15-166	5
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	88	85	31-137	3
Tetrachloroethene	mg/kg (ppm)	2	<0.025	80	80	20-133	0
Dibromochloromethane	mg/kg (ppm)	2	<0.05	83	82	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	83	81	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	80	79	32-129	1
Ethylbenzene	mg/kg (ppm)	2	0.034	83	82	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	83	82	31-143	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	81	81	34-136	0
o-Xylene	mg/kg (ppm)	2	<0.05	81	79	33-134	2
Styrene	mg/kg (ppm)	2	<0.05	80	80	35-137	0
Isopropylbenzene	mg/kg (ppm)	2	<0.05	81	79	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	87	85	21-156	2
n-Propylbenzene	mg/kg (ppm)	2	0.043	86	83	23-146	4
Bromobenzene	mg/kg (ppm)	2	<0.05	86	81	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	86	83	18-149	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	87	85	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	91	87	25-144	4
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	85	83	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	84	82	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	85	82	30-137	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	0.038	86	83	10-182	4
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	89	84	23-145	6
p-Isopropyltoluene	mg/kg (ppm)	2	0.83	91 b	88 b	21-149	3 b
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	80	78	30-131	3
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	84	80	29-129	5
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	83	79	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	85	86	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	82	80	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	98	97	10-142	1
Naphthalene	mg/kg (ppm)	2	0.088	84	81	14-157	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	85	82	20-144	4

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	104	27-133
Vinyl chloride	mg/kg (ppm)	2	91	22-139
Bromomethane	mg/kg (ppm)	2	70	10-201
Chloroethane	mg/kg (ppm)	2	67	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	87	10-196
Acetone	mg/kg (ppm)	10	89	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	94	47-128
Hexane	mg/kg (ppm)	2	100	43-142
Methylene chloride	mg/kg (ppm)	2	91	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	96	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	92	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	95	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	91	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	92	64-135
Chloroform	mg/kg (ppm)	2	95	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	97	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	100	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	91	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	95	64-136
Carbon tetrachloride	mg/kg (ppm)	2	95	60-139
Benzene	mg/kg (ppm)	2	93	65-136
Trichloroethene	mg/kg (ppm)	2	90	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	95	61-145
Bromodichloromethane	mg/kg (ppm)	2	96	57-126
Dibromomethane	mg/kg (ppm)	2	89	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	98	65-143
Toluene	mg/kg (ppm)	2	99	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	102	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	106	62-131
2-Hexanone	mg/kg (ppm)	10	106	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	106	67-128
Tetrachloroethene	mg/kg (ppm)	2	99	68-128
Dibromochloromethane	mg/kg (ppm)	2	103	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	105	66-129
Chlorobenzene	mg/kg (ppm)	2	99	67-128
Ethylbenzene	mg/kg (ppm)	2	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	99	64-121
m,p-Xylene	mg/kg (ppm)	4	100	68-128
o-Xylene	mg/kg (ppm)	2	97	67-129
Styrene	mg/kg (ppm)	2	102	67-129
Isopropylbenzene	mg/kg (ppm)	2	99	68-128
Bromoform	mg/kg (ppm)	2	106	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	110	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	108	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	109	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	118	61-137
2-Chlorotoluene	mg/kg (ppm)	2	105	69-128
4-Chlorotoluene	mg/kg (ppm)	2	107	67-127
tert-Butylbenzene	mg/kg (ppm)	2	104	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	107	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	108	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	102	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	107	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	106	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	113	50-153
Naphthalene	mg/kg (ppm)	2	105	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	106	61-126

Date of Report: 02/21/24
Date Received: 02/01/24
Project: Whidbey Marine 0204475-001, F&BI 402019

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 402019-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	81	81	28-125	0
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	85	83	10-192	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	81	79	10-163	2
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	88	86	45-128	2
Acenaphthene	mg/kg (ppm)	0.83	<0.01	87	85	36-125	2
Fluorene	mg/kg (ppm)	0.83	<0.01	90	87	48-121	3
Phenanthrene	mg/kg (ppm)	0.83	<0.01	91	87	46-122	4
Anthracene	mg/kg (ppm)	0.83	<0.01	92	89	30-144	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	98	93	50-150	5
Pyrene	mg/kg (ppm)	0.83	<0.01	91	91	40-134	0
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	92	92	50-150	0
Chrysene	mg/kg (ppm)	0.83	<0.01	96	95	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	98	98	50-150	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	92	94	50-150	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	100	98	50-150	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	101	99	40-140	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	99	96	41-136	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	96	94	29-139	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	85	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	87	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	82	63-113
Acenaphthylene	mg/kg (ppm)	0.83	89	70-130
Acenaphthene	mg/kg (ppm)	0.83	88	66-112
Fluorene	mg/kg (ppm)	0.83	90	67-117
Phenanthrene	mg/kg (ppm)	0.83	91	70-130
Anthracene	mg/kg (ppm)	0.83	93	70-130
Fluoranthene	mg/kg (ppm)	0.83	97	70-130
Pyrene	mg/kg (ppm)	0.83	91	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	94	70-130
Chrysene	mg/kg (ppm)	0.83	96	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	100	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	95	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	99	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	104	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	103	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	101	65-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402019

SAMPLE CHAIN OF CUSTODY

02/01/24

B2 / N2

Page # 1 of 1

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ✓ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

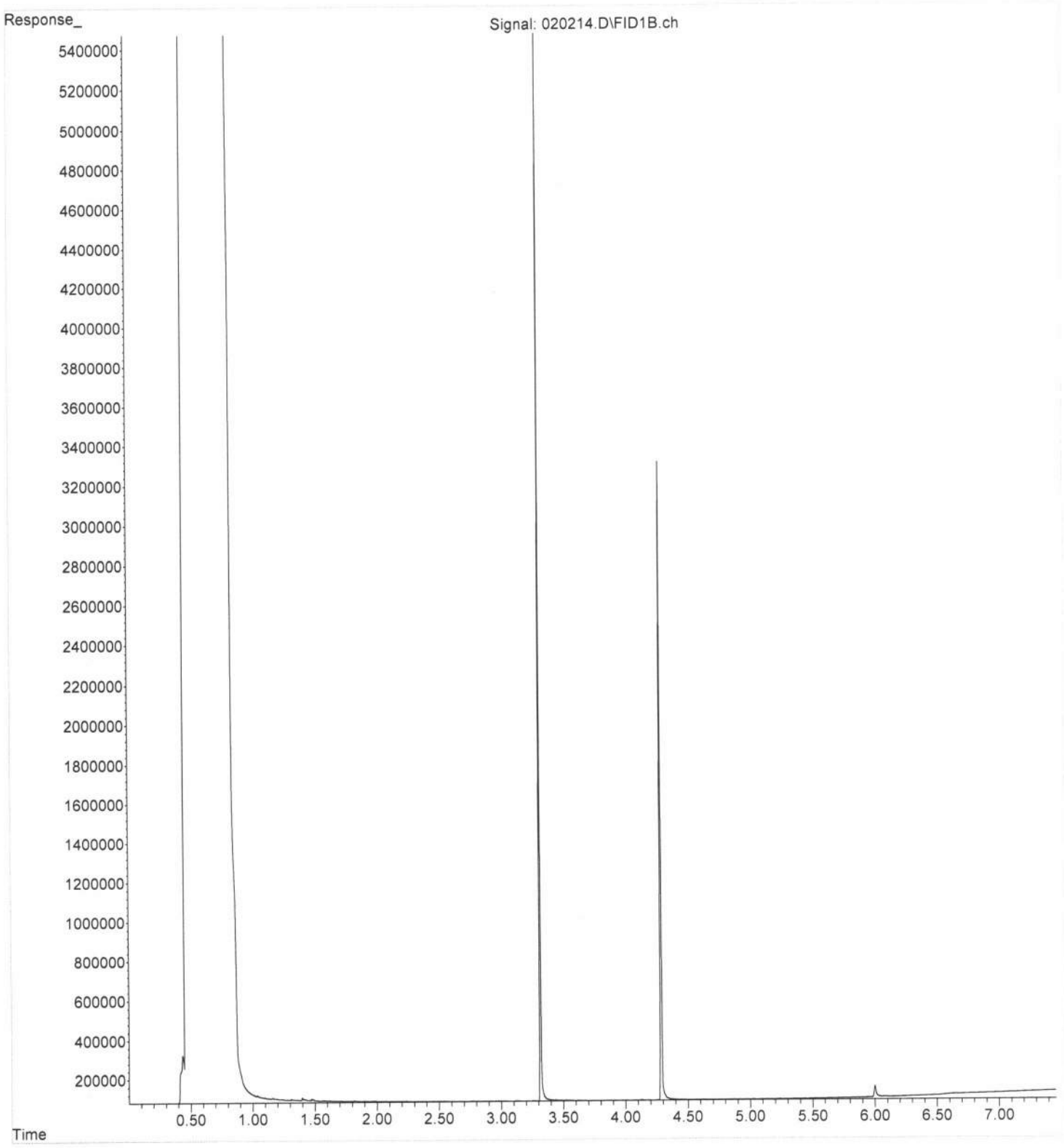
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	EPH and VPH NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB, EDC, MTBE	Lead, Arsenic	TOC	cVOCs	Notes
HA-4-S1	01 A-F	1/29/24	1110	S	6	X	X			X	X		X	X			~~Hold for~~
HA-4-S2	02		1130			X	X			X	X		X	X	X		~~analyses.~~
HA-4-S3	03		1340			X	X			X	X		X	X			~~PM to reach~~
HA-4-S4	04		1350			X	X		A	X	X		X	X	X		~~out.~~
HA-4-S5	05		1400			X	X	X								X	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-4-S6	06 ✓	↓	1600	↓	↓	X	X			X	X		X	X	X		

A-per HG 02/06/24 ME

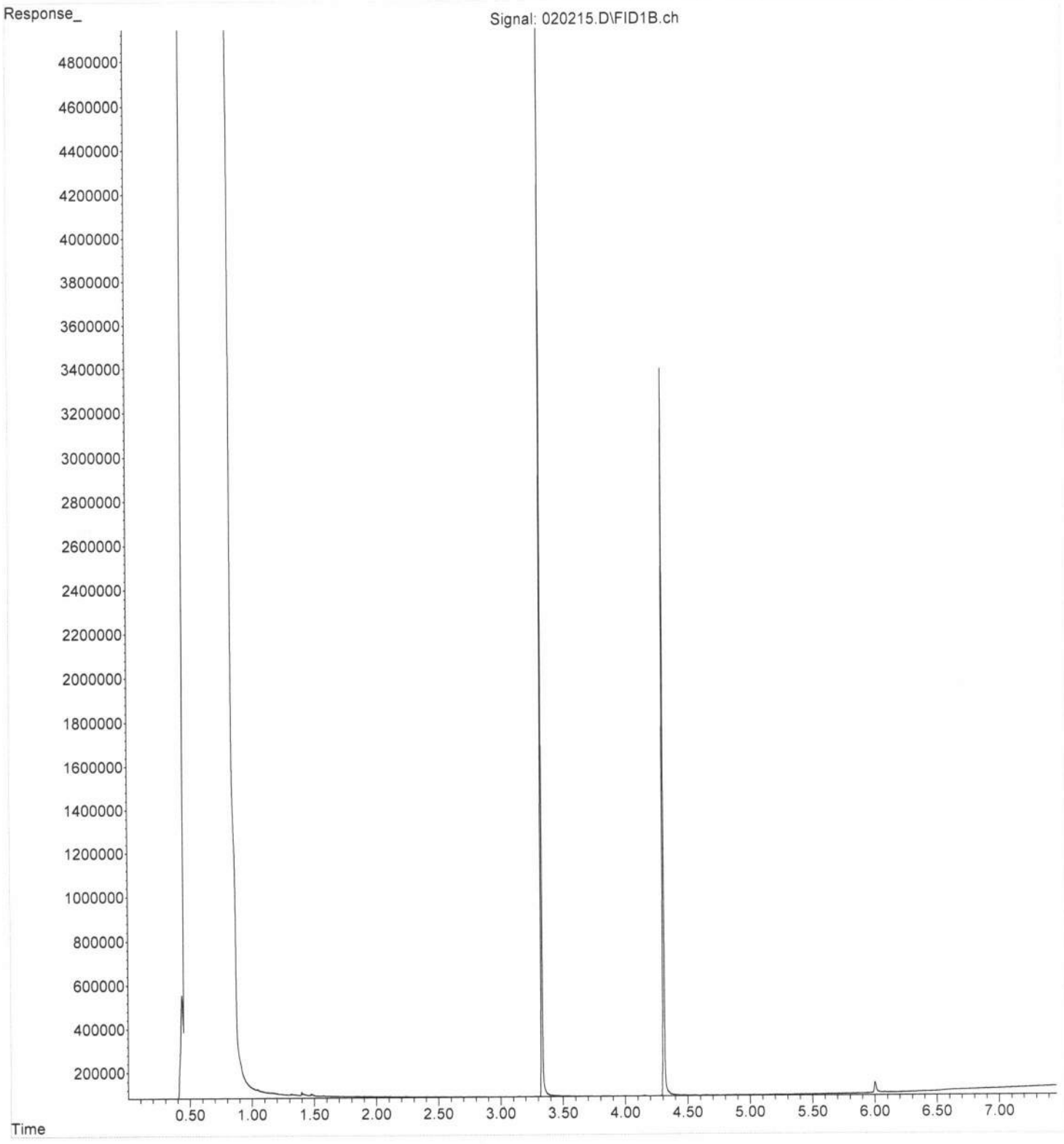
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H+A	2/1/24	1517
Received by:	Nhan Phan	FEBI	2/1/24	1517
Relinquished by:				
Received by:		Samples received at 1 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

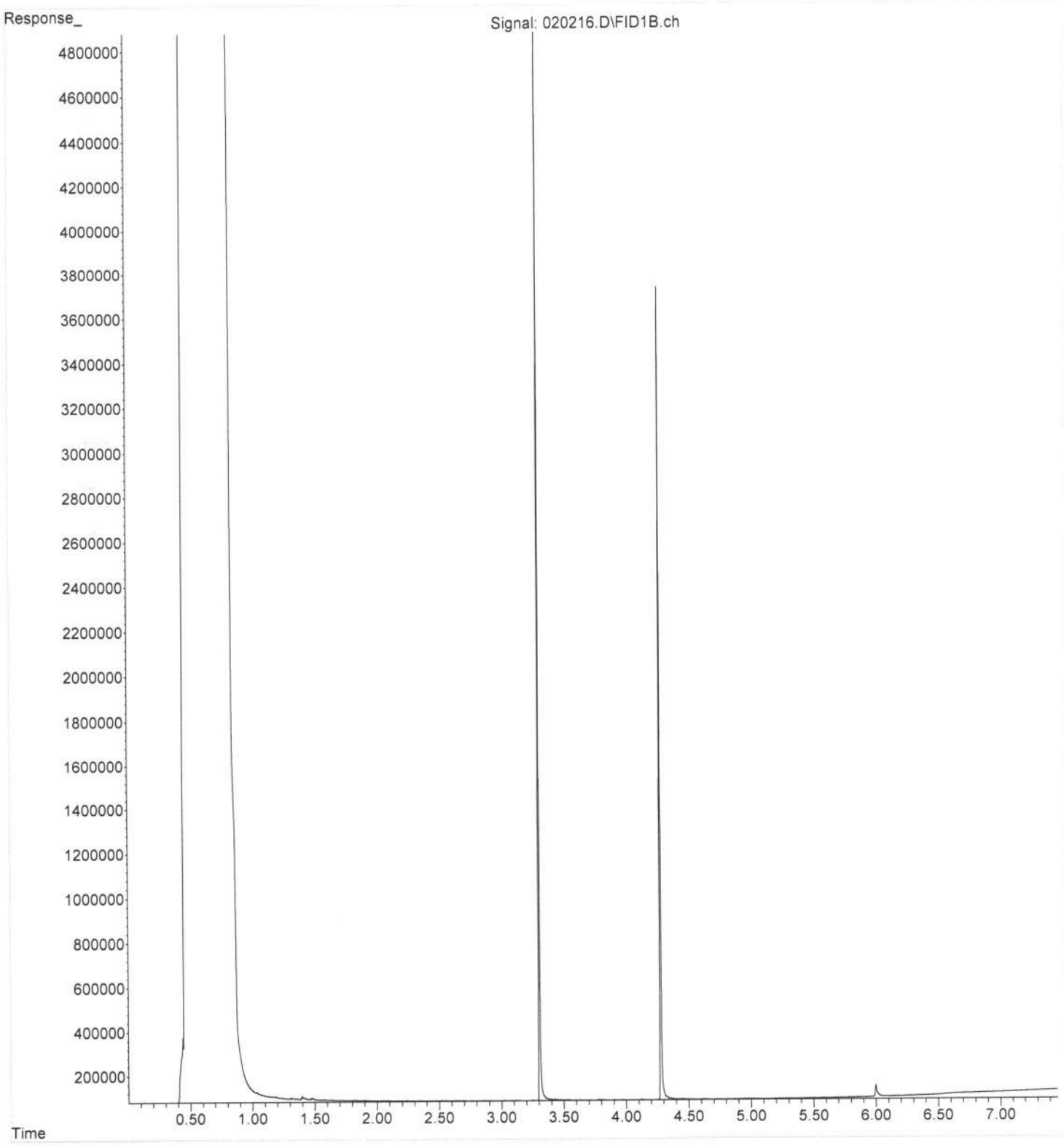
File :P:\Proc_GC10\02-02-24\020214.D
Operator : IJL
Acquired : 02 Feb 2024 11:43 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-01
Misc Info :
Vial Number: 14



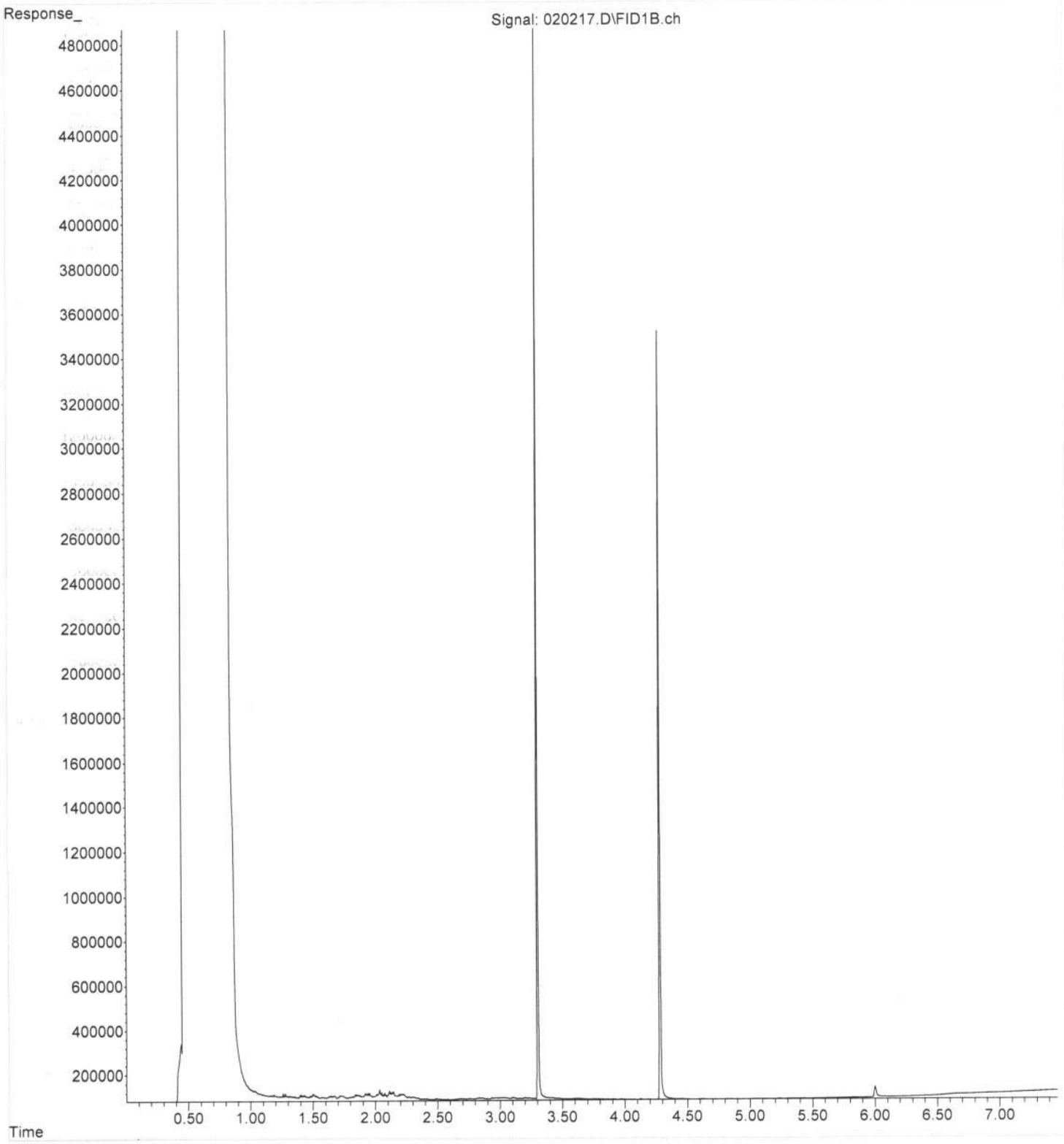
File :P:\Proc_GC10\02-02-24\020215.D
Operator : IJL
Acquired : 02 Feb 2024 11:55 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-02
Misc Info :
Vial Number: 15



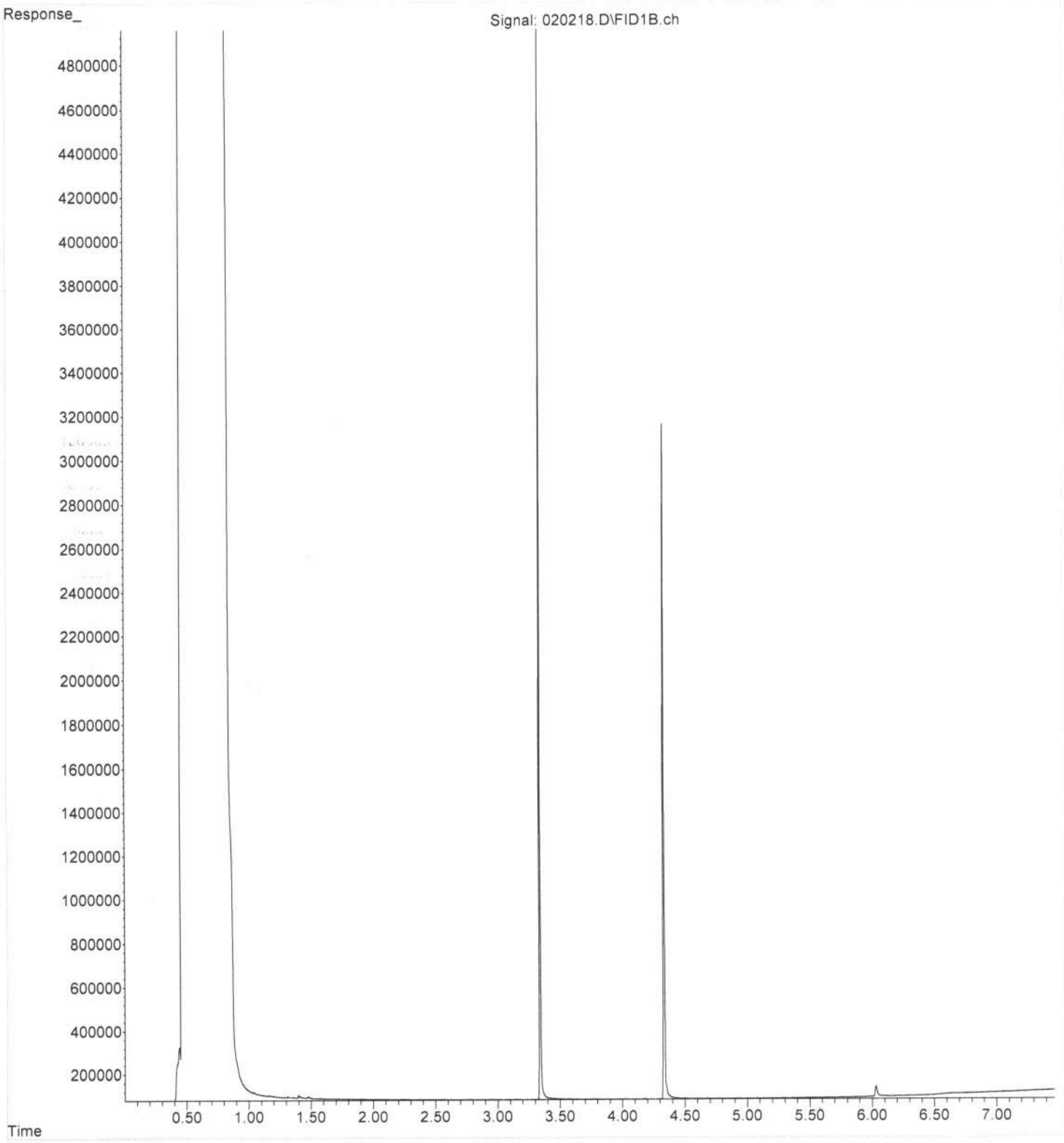
File :P:\Proc_GC10\02-02-24\020216.D
Operator : IJL
Acquired : 02 Feb 2024 12:07 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-03
Misc Info :
Vial Number: 16



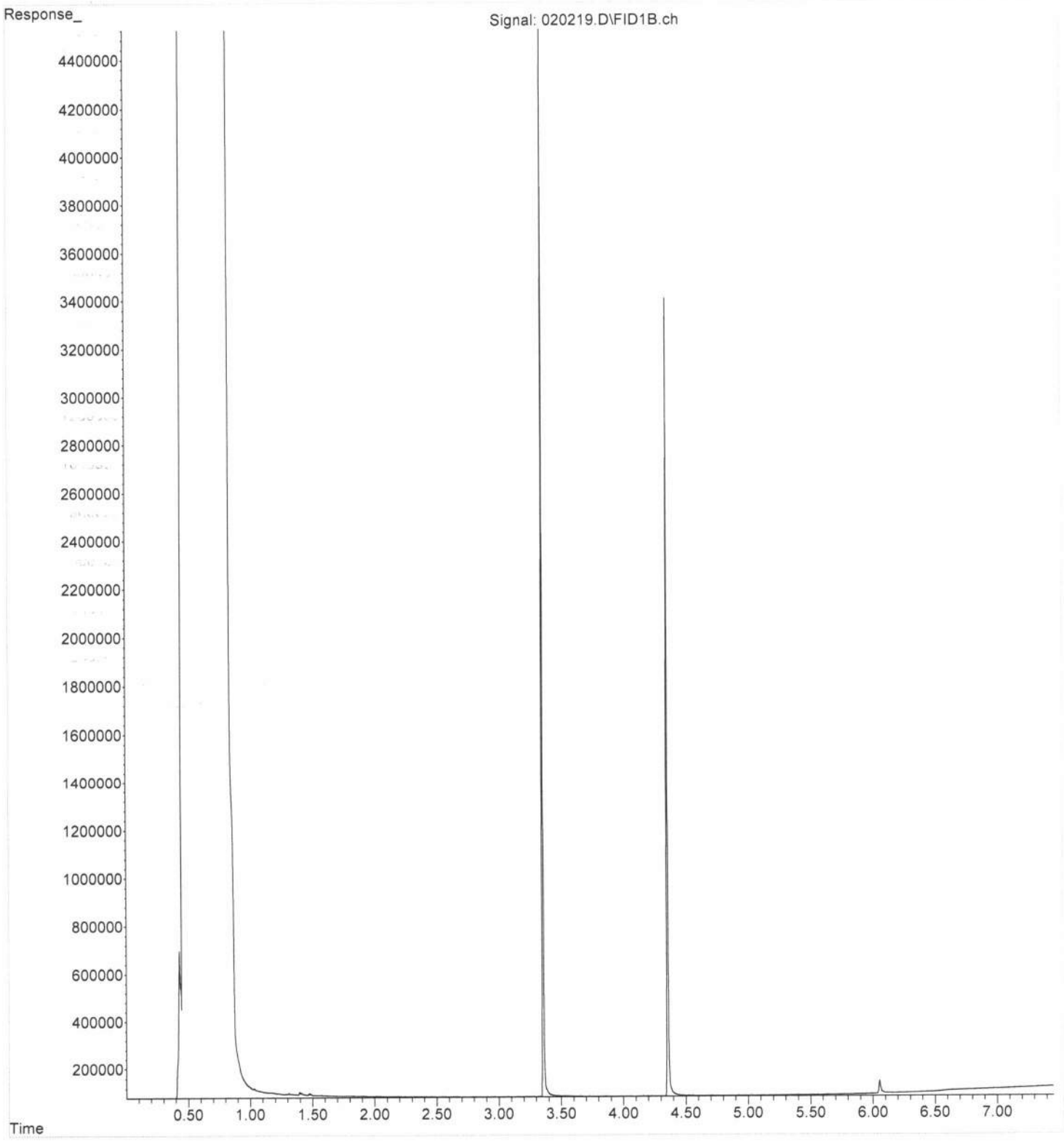
File :P:\Proc_GC10\02-02-24\020217.D
Operator : IJL
Acquired : 02 Feb 2024 12:18 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-04
Misc Info :
Vial Number: 17



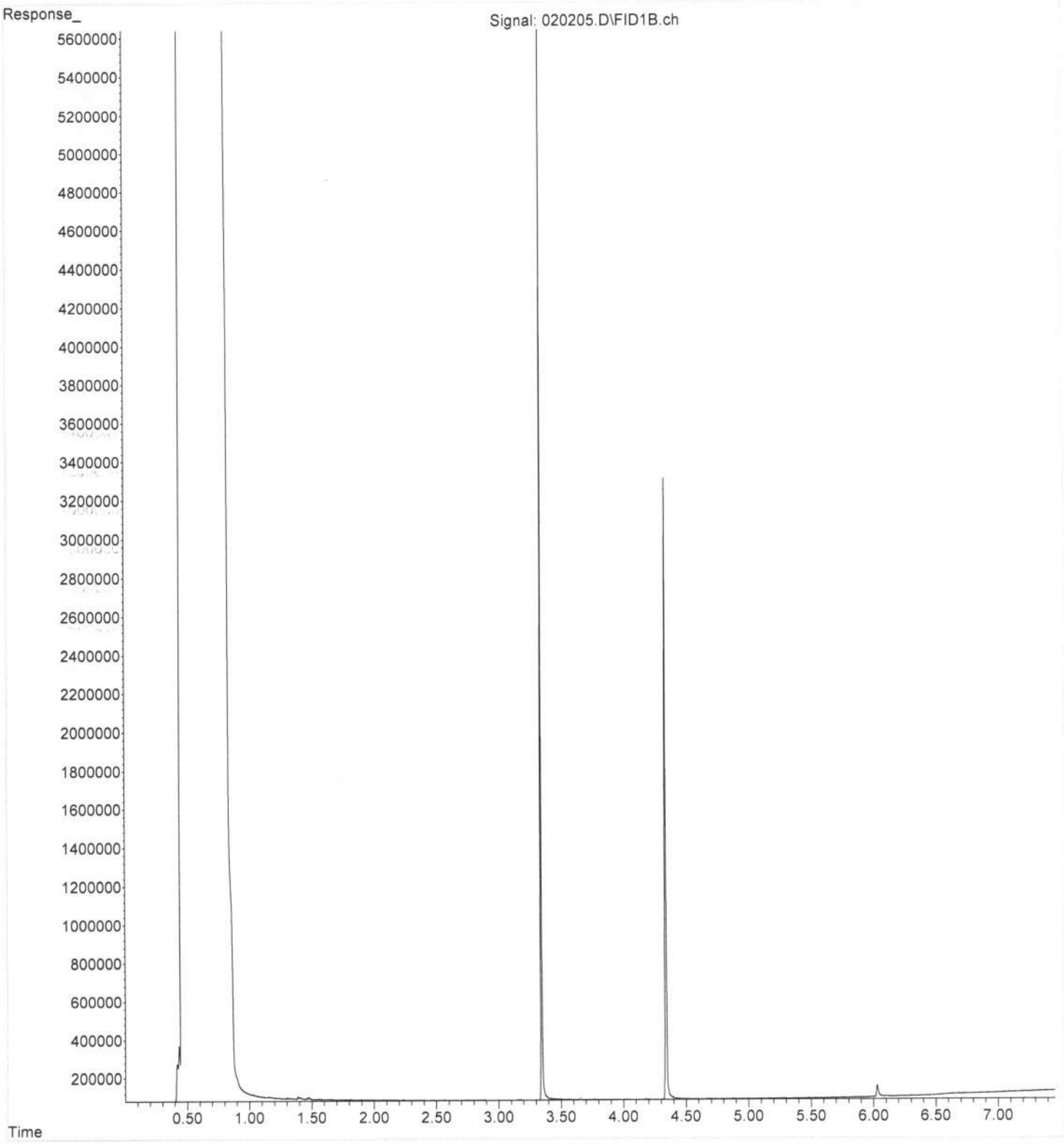
File :P:\Proc_GC10\02-02-24\020218.D
Operator : IJL
Acquired : 02 Feb 2024 12:30 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-05
Misc Info :
Vial Number: 18



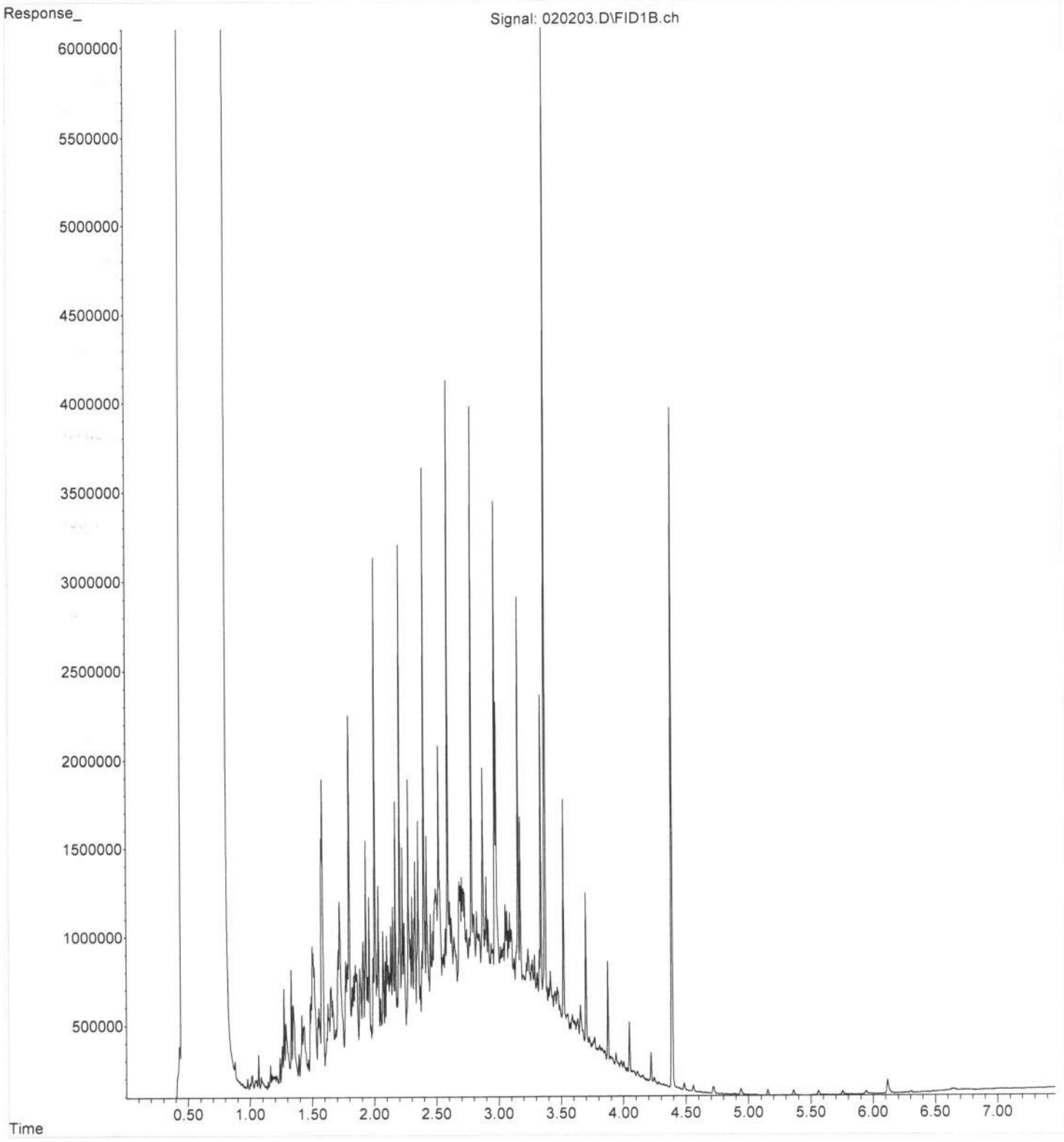
File :P:\Proc_GC10\02-02-24\020219.D
Operator : IJL
Acquired : 02 Feb 2024 12:42 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 402019-06
Misc Info :
Vial Number: 19



File :P:\Proc_GC10\02-02-24\020205.D
Operator : IJL
Acquired : 02 Feb 2024 10:00 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 04-291 mb
Misc Info :
Vial Number: 7



File :P:\Proc_GC10\02-02-24\020203.D
Operator : IJL
Acquired : 02 Feb 2024 09:02 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 500 DX 70-26F
Misc Info :
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402019
Work Order Number: 2402086

February 20, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 2/6/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/20/2024*

CLIENT: Friedman & Bruya
Project: 402019
Work Order: 2402086

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402086-001	HA-4-S4	01/29/2024 1:50 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2402086**
Date: **2/20/2024**

CLIENT: Friedman & Bruya
Project: 402019

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402086**
Date Reported: **2/20/2024**

CLIENT: Friedman & Bruya
Project: 402019

Lab ID: 2402086-001 **Collection Date:** 1/29/2024 1:50:00 PM
Client Sample ID: **HA-4-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42874		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C10-C12)	15.9	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C12-C16)	17.3	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C8-C10)	ND	21.9		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C12-C16)	30.1	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C16-C21)	20.9	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.0		mg/Kg-dry	1	2/12/2024 2:32:59 PM
Surr: 1-Chlorooctadecane	66.6	50 - 150		%Rec	1	2/12/2024 2:32:59 PM
Surr: o-Terphenyl	84.5	50 - 150		%Rec	1	2/12/2024 2:32:59 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	2.22	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C6-C8)	16.2	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C8-C10)	37.1	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aliphatic Hydrocarbon (C10-C12)	36.0	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C8-C10)	17.0	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C10-C12)	28.6	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Aromatic Hydrocarbon (C12-C13)	16.8	1.78		mg/Kg-dry	1	2/7/2024 4:53:00 PM
Surr: 2,5-dibromotoluene	99.4	60 - 140		%Rec	1	2/7/2024 4:53:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R89488		Analyst: BS
Percent Moisture	12.8	0.500		wt%	1	2/8/2024 9:59:29 AM

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42874**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89581**	
Client ID: **MBLKS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870044**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	65.5		100.0		65.5	50	150				

Sample ID: **MB-42874**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89582**	
Client ID: **MBLKS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870052**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	93.8		100.0		93.8	50	150				

Sample ID: **LCS-42874**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/8/2024**		RunNo: **89581**	
Client ID: **LCSS**	Batch ID: **42874**					Analysis Date: **2/12/2024**		SeqNo: **1870045**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	105	20.0	250.0	0	42.1	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	68.7	10.0	125.0	0	55.0	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	77.6	10.0	125.0	0	62.1	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	85.8	10.0	125.0	0	68.7	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	97.2	10.0	125.0	0	77.7	36.6	144				
Surr: 1-Chlorooctadecane	70.4		100.0		70.4	50	150				

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42874**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/8/2024**	RunNo: **89582**
Client ID: **LCSS**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870053**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	136	20.0	250.0	0	54.2	18.6	130				
Aromatic Hydrocarbon (C10-C12)	93.2	10.0	125.0	0	74.5	42.7	105				
Aromatic Hydrocarbon (C12-C16)	109	10.0	125.0	0	87.0	43.6	124				
Aromatic Hydrocarbon (C16-C21)	123	10.0	125.0	0	98.5	49.5	124				
Aromatic Hydrocarbon (C21-C34)	107	10.0	125.0	0	85.3	54.8	124				
Surr: o-Terphenyl	89.2		100.0		89.2	50	150				

Sample ID: **2402128-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/8/2024**	RunNo: **89581**
Client ID: **BATCH**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870048**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	91.9	22.5	280.7	14.63	27.5	6.01	130				
Aliphatic Hydrocarbon (C10-C12)	106	11.2	140.4	65.65	28.8	11.6	127				
Aliphatic Hydrocarbon (C12-C16)	231	11.2	140.4	234.0	-1.96	24.7	129				S
Aliphatic Hydrocarbon (C16-C21)	191	11.2	140.4	166.5	17.6	25.5	132				S
Aliphatic Hydrocarbon (C21-C34)	165	11.2	140.4	98.08	47.7	21.4	138				
Surr: 1-Chlorooctadecane	61.0		112.3		54.4	50	150				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2402128-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/8/2024**	RunNo: **89582**
Client ID: **BATCH**	Batch ID: **42874**		Analysis Date: **2/12/2024**	SeqNo: **1870056**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	122	22.5	280.7	8.000	40.6	12.6	130				
Aromatic Hydrocarbon (C10-C12)	110	11.2	140.4	34.34	53.6	26.3	130				
Aromatic Hydrocarbon (C12-C16)	178	11.2	140.4	112.0	46.8	23.3	139				
Aromatic Hydrocarbon (C16-C21)	211	11.2	140.4	174.1	26.5	32.2	131				S
Aromatic Hydrocarbon (C21-C34)	146	11.2	140.4	106.0	28.8	35.8	139				S
Surr: o-Terphenyl	75.6		112.3		67.3	50	150				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2402128-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/8/2024** RunNo: **89581**
Client ID: **BATCH** Batch ID: **42874** Analysis Date: **2/12/2024** SeqNo: **1870049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	137	22.2	277.2	14.63	44.0	6.01	130	91.93	39.2	30	
Aliphatic Hydrocarbon (C10-C12)	150	11.1	138.6	65.65	61.1	11.6	127	106.1	34.4	30	
Aliphatic Hydrocarbon (C12-C16)	337	11.1	138.6	234.0	74.6	24.7	129	231.2	37.3	30	
Aliphatic Hydrocarbon (C16-C21)	265	11.1	138.6	166.5	70.7	25.5	132	191.3	32.1	30	
Aliphatic Hydrocarbon (C21-C34)	210	11.1	138.6	98.08	81.1	21.4	138	165.0	24.2	30	
Surr: 1-Chlorooctadecane	78.0		110.9		70.3	50	150		0		

Sample ID: **2402128-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/8/2024** RunNo: **89582**
Client ID: **BATCH** Batch ID: **42874** Analysis Date: **2/12/2024** SeqNo: **1870057**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	147	22.2	277.2	8.000	50.1	12.6	130	121.9	18.6	30	
Aromatic Hydrocarbon (C10-C12)	129	11.1	138.6	34.34	68.3	26.3	130	109.6	16.3	30	
Aromatic Hydrocarbon (C12-C16)	217	11.1	138.6	112.0	75.5	23.3	139	177.8	19.8	30	
Aromatic Hydrocarbon (C16-C21)	271	11.1	138.6	174.1	70.2	32.2	131	211.3	24.9	30	
Aromatic Hydrocarbon (C21-C34)	186	11.1	138.6	106.0	58.0	35.8	139	146.4	24.1	30	
Surr: o-Terphenyl	87.7		110.9		79.1	50	150		0		

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42804**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **LCSS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868715**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.6	2.50	20.00	0	98.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	8.87	2.50	10.00	0	88.7	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.3	2.50	10.00	0	103	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.4	2.50	10.00	0	104	70	130				
Aromatic Hydrocarbon (C8-C10)	48.7	2.50	50.00	0	97.5	70	130				
Aromatic Hydrocarbon (C10-C12)	9.91	2.50	10.00	0	99.1	70	130				
Aromatic Hydrocarbon (C12-C13)	10.4	2.50	10.00	0	104	70	130				
Surr: 2,5-dibromotoluene	2.41		2.500		96.3	60	140				

Sample ID: **MB-42804**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **MBLKS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868698**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	2.37		2.500		95.0	60	140				

Sample ID: **2402008-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **BATCH**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	104	18.3		0	0			113.7	8.57	25	D
Aliphatic Hydrocarbon (C6-C8)	499	18.3		0	0			498.5	0.0812	25	D
Aliphatic Hydrocarbon (C8-C10)	419	18.3		0	0			395.4	5.80	25	DE
Aliphatic Hydrocarbon (C10-C12)	525	18.3		0	0			505.0	3.86	25	DE
Aromatic Hydrocarbon (C8-C10)	1,810	18.3		0	0			1,757	3.17	25	D

Work Order: 2402086
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2402008-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **BATCH** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	608	18.3		0	0			596.1	1.91	25	DE
Aromatic Hydrocarbon (C12-C13)	208	18.3		0	0			204.9	1.53	25	D
Surr: 2,5-dibromotoluene	19.0		18.30		104	60	140		0	0	D

Sample ID: **2402008-005BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **BATCH** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868705**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	24.0	1.67	13.35	10.72	99.7	70	130				H
Aliphatic Hydrocarbon (C6-C8)	18.6	1.67	6.673	11.16	111	70	130				H
Aliphatic Hydrocarbon (C8-C10)	73.0	1.67	6.673	67.05	89.0	70	130				H
Aliphatic Hydrocarbon (C10-C12)	152	1.67	6.673	148.0	63.0	70	130				SH
Aromatic Hydrocarbon (C8-C10)	143	1.67	33.36	111.3	95.5	70	130				H
Aromatic Hydrocarbon (C10-C12)	141	1.67	6.673	139.7	15.6	70	130				SH
Aromatic Hydrocarbon (C12-C13)	74.3	1.67	6.673	69.70	68.8	70	130				SH
Surr: 2,5-dibromotoluene	1.82		1.668		109	60	140				H

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402086
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402086

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402019	D-661

REMARKS

EIM and EQuIS 4

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
HA-4-S4		1/29/2024	1350	soil	2	x	x									

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1335
Received by:		Nathan Hobbs	FAI	2/6/24	1540
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402019
Work Order Number: 2402047

February 09, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 3 sample(s) on 2/2/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/09/2024*

CLIENT: Friedman & Bruya
Project: 402019
Work Order: 2402047

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402047-001	HA-4-S2	01/29/2024 11:30 AM	02/02/2024 12:53 PM
2402047-002	HA-4-S4	01/29/2024 1:50 PM	02/02/2024 12:53 PM
2402047-003	HA-4-S6	01/29/2024 4:00 PM	02/02/2024 12:53 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402047**
Date: **2/9/2024**

CLIENT: Friedman & Bruya
Project: 402019

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402019

Lab ID: 2402047-001 **Collection Date:** 1/29/2024 11:30:00 AM
Client Sample ID: **HA-4-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 3:08:00 PM

Lab ID: 2402047-002 **Collection Date:** 1/29/2024 1:50:00 PM
Client Sample ID: **HA-4-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 4:10:00 PM

Lab ID: 2402047-003 **Collection Date:** 1/29/2024 4:00:00 PM
Client Sample ID: **HA-4-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42885		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/9/2024 4:24:00 PM

Work Order: 2402047
CLIENT: Friedman & Bruya
Project: 402019

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42885**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **MBLKS**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869395**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42885**	SampType: **LCS**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **LCSS**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869396**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	80	120				

Sample ID: **2402047-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869398**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150						0		20	

Sample ID: **2402047-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869399**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.10	0.150	1.000	0	110	75	125				

Sample ID: **2402047-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **2/9/2024**		RunNo: **89546**		
Client ID: **HA-4-S2**	Batch ID: **42885**					Analysis Date: **2/9/2024**		SeqNo: **1869400**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.11	0.150	1.000	0	111	75	125	1.095	1.63	20	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402047
Logged by:	Morgan Wilson	Date Received:	2/2/2024 12:53:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402047

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO. 402019	PO # D-655
REMARKS EIM and EQuIS 4	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: TOC	Nitrate	Nitrite	Sulfate	RSK-175						Notes
HA-4-S2		1/29/2024	1130	soil	1	x										
HA-4-S4		1/29/2024	1350	soil	1	x										
HA-4-S6		1/29/2024	1600	soil	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/2/24	0915
Received by:		NAK RJS	FAI	2/2/24	12:53
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 26, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included is the amended report from the testing of material submitted on January 29, 2024 from the Whidbey Marine 0204475-001, F&BI 401358 project. The sample IDs for the TSS results have been corrected.

We apologize for the inconvenience and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0223R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 23, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on January 29, 2024 from the Whidbey Marine 0204475-001, F&BI 401358 project. There are 126 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0223R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 29, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 401358 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
401358 -01	HA-1-S1
401358 -02	HA-1-S2
401358 -03	HA-1-S3
401358 -04	HA-1-S4
401358 -05	HA-1-S5
401358 -06	HA-1-S6
401358 -07	HA-1-DUP
401358 -08	HA-2-S1.5
401358 -09	HA-2-S2
401358 -10	HA-2-S3
401358 -11	HA-2-S4
401358 -12	HA-2-S5
401358 -13	HA-2-S6
401358 -14	HA-2-S7
401358 -15	HA-2-S8
401358 -16	HA-2-S9
401358 -17	HA-2-S10
401358 -18	HA-3-S1
401358 -19	HA-3-S2
401358 -20	HA-3-S3
401358 -21	HA-3-S4
401358 -22	HA-3-S5
401358 -23	HA-3-S6
401358 -24	MW-23D-S3
401358 -25	MW-23D-S4
401358 -26	MW-23D-S5
401358 -27	MW-23D-S6
401358 -28	MW-23D-DUP
401358 -29	HA-1-GW
401358 -30	HA-2-GW
401358 -31	HA-3-GW
401358 -32	Dup-01

Samples HA-1-S2, HA-1-S4, HA-1-S6, HA-1-DUP, HA-2-S3, HA-2-S5, HA-2-S7, MW-23D-S4, MW-23D-S6, and MW-23D-DUP were sent to Fremont Analytical for total organic carbon analysis. In addition, samples HA-1-S6, HA-1-DUP, HA-2-S7, HA-3-S6, and MW-23D-S6 were sent to Fremont Analytical for EPH and VPH analyses. The reports are enclosed.

CASE NARRATIVE (continued)

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

Several 8260D compounds exceeded the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

The 8260D samples HA-2-S9, HA-2-S10, and MW-23D-S5 were analyzed outside of the holding time. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-1-S1 401358-01	2
HA-1-S2 401358-02	4
HA-1-S3 401358-03	13
HA-1-S4 401358-04	16
HA-1-S6 401358-06	10
HA-1-DUP 401358-07	11
HA-2-S1.5 401358-08	6
HA-2-S2 401358-09	4
HA-2-S3 401358-10	3
HA-2-S4 401358-11	13
HA-2-S5 401358-12	21

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
HA-2-S7 401358-14	11
HA-2-S8 401358-15	10
HA-2-S9 401358-16	13
HA-2-S10 401358-17	18
HA-3-S1 401358-18	6
HA-3-S2 401358-19	7
HA-3-S3 401358-20	8
HA-3-S4 401358-21	23
HA-3-S6 401358-23	8
MW-23D-S3 401358-24	17
MW-23D-S4 401358-25	18

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: NA
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
MW-23D-S5 401358-26	6
MW-23D-S6 401358-27	11
MW-23D-DUP 401358-28	3

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-1-S1 401358-01	<5	90
HA-1-S2 401358-02	<5	96
HA-1-S3 401358-03	<5	91
HA-1-S4 401358-04	<5	95
HA-1-S6 401358-06 1/50	2,000	103
HA-1-DUP 401358-07 1/20	1,000	107
HA-2-S1.5 401358-08	<5	95
HA-2-S2 401358-09	<5	96
HA-2-S3 401358-10	<5	92
HA-2-S4 401358-11	<5	96
HA-2-S5 401358-12	<5	96

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-2-S7 401358-14 1/100	17,000	114
HA-2-S8 401358-15	6.4	136
HA-3-S1 401358-18	<5	92
HA-3-S2 401358-19	<5	96
HA-3-S3 401358-20	<5	90
HA-3-S4 401358-21	<5	97
HA-3-S6 401358-23 1/100	11,000	137
MW-23D-S3 401358-24	<5	93
MW-23D-S4 401358-25	<5	90
MW-23D-S6 401358-27 1/20	1,100	117

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24, and 02/02/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-23D-DUP 401358-28 1/50	1,000	103
Method Blank 04-0188 MB	<5	132
Method Blank 04-189 MB	<5	94
Method Blank 04-193 MB	<5	129

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/29/24
Date Analyzed: 01/30/24 and 01/31/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-2-S9 401358-16	<0.02	<0.02	<0.02	<0.06	<5	87
HA-2-S10 401358-17	<0.02	<0.02	<0.02	<0.06	<5	85
MW-23D-S5 401358-26	<0.02	<0.02	<0.02	<0.06	<5	87
Method Blank 04-0188 MB	<0.02	<0.02	<0.02	<0.06	<5	110
Method Blank 04-189 MB	<0.02	<0.02	<0.02	<0.06	<5	90

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/31/24
Date Analyzed: 01/31/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
HA-1-GW 401358-29	<1	1.8	<1	<3	<100	85
HA-2-GW 401358-30	1.0	2.2	<1	5.0	900	85
HA-3-GW 401358-31	<1	<1	<1	<3	<100	88
Dup-01 401358-32	<1	<1	<1	<3	<100	86
Method Blank 04-0191 MB	<1	<1	<1	<3	<100	88

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-1-S1 401358-01	<50	<250	99
HA-1-S2 401358-02	<50	<250	96
HA-1-S3 401358-03	<50	<250	101
HA-1-S4 401358-04	<50	<250	97
HA-1-S6 401358-06	<50	<250	106
HA-1-DUP 401358-07	<50	<250	107
HA-2-S1.5 401358-08	<50	<250	101
HA-2-S2 401358-09	<50	<250	103
HA-2-S3 401358-10	<50	<250	102
HA-2-S4 401358-11	<50	<250	102
HA-2-S5 401358-12	<50	<250	105

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-2-S7 401358-14	1,400 x	<250	107
HA-2-S8 401358-15	<50	<250	91
HA-2-S9 401358-16	<50	<250	91
HA-2-S10 401358-17	<50	<250	94
HA-3-S1 401358-18	<50	<250	98
HA-3-S2 401358-19	<50	<250	97
HA-3-S3 401358-20	<50	<250	100
HA-3-S4 401358-21	<50	<250	103
HA-3-S6 401358-23	340 x	<250	98
MW-23D-S3 401358-24	<50	<250	94
MW-23D-S4 401358-25	<50	<250	95

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24 and 02/01/24
Date Analyzed: 01/30/24, 01/31/24 and 02/01/24

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-23D-S5 401358-26	<50	<250	93
MW-23D-S6 401358-27	230 x	<250	104
MW-23D-DUP 401358-28	65 x	<250	101
Method Blank 04-259 MB	<50	<250	92
Method Blank 04-257 MB2	<50	<250	101
Method Blank 04-287 MB	<50	<250	90

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/30/24
Date Analyzed: 01/30/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
HA-1-GW 401358-29 1/1.2	<60	<300	93
HA-2-GW 401358-30	390 x	<250	93
HA-3-GW 401358-31 1/1.2	<60	<300	83
Dup-01 401358-32 1/1.2	<60	<300	82
Method Blank 04-0251 MB2	<50	<250	89

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-01
Date Analyzed:	01/30/24	Data File:	401358-01.041
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.48
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-02
Date Analyzed:	01/30/24	Data File:	401358-02.119
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.40
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-03
Date Analyzed:	01/30/24	Data File:	401358-03.120
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.28
Lead	1.93

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-04
Date Analyzed:	01/30/24	Data File:	401358-04.121
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.65
Lead	2.25

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-06
Date Analyzed:	01/30/24	Data File:	401358-06.122
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.79
Lead	1.55

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-07
Date Analyzed:	01/30/24	Data File:	401358-07.123
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.84
Lead	1.59

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-08
Date Analyzed:	01/30/24	Data File:	401358-08.124
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.47
Lead	2.08

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-09
Date Analyzed:	01/30/24	Data File:	401358-09.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.49
Lead	1.25

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-10
Date Analyzed:	01/30/24	Data File:	401358-10.135
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.83
Lead	1.23

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-11
Date Analyzed:	01/30/24	Data File:	401358-11.136
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.72
Lead	2.14

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-12
Date Analyzed:	01/30/24	Data File:	401358-12.137
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.76
Lead	6.01

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14
Date Analyzed:	01/30/24	Data File:	401358-14.138
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.86
Lead	1.82

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15
Date Analyzed:	02/01/24	Data File:	401358-15.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.73
Lead	1.86

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-18
Date Analyzed:	01/30/24	Data File:	401358-18.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Lead	1.21

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-19
Date Analyzed:	01/30/24	Data File:	401358-19.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.38
Lead	1.20

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-20
Date Analyzed:	01/30/24	Data File:	401358-20.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.26
Lead	2.03

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-21
Date Analyzed:	01/30/24	Data File:	401358-21.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.58
Lead	2.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23
Date Analyzed:	01/30/24	Data File:	401358-23.162
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.22
Lead	1.73

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-24
Date Analyzed:	01/30/24	Data File:	401358-24.163
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.40
Lead	3.16

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-25
Date Analyzed:	01/30/24	Data File:	401358-25.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.78
Lead	3.69

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-27
Date Analyzed:	01/30/24	Data File:	401358-27.171
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.09
Lead	3.39

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-28
Date Analyzed:	01/30/24	Data File:	401358-28.177
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.67
Lead	3.10

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	I4-67 mb
Date Analyzed:	01/30/24	Data File:	I4-67 mb.039
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	I4-68 mb
Date Analyzed:	01/30/24	Data File:	I4-68 mb.115
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	I4-80 mb
Date Analyzed:	02/01/24	Data File:	I4-80 mb.100
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-01 1/0.5
Date Analyzed:	01/31/24	Data File:	013127.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0014
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0064
Hexane	<0.25	o-Xylene	0.0023
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0036	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-02 1/0.5
Date Analyzed:	01/31/24	Data File:	013128.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0019
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0085
Hexane	<0.25	o-Xylene	0.0020
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0042	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-03 1/0.5
Date Analyzed:	01/31/24	Data File:	013129.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0019	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-04 1/0.5
Date Analyzed:	01/31/24	Data File:	013130.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0014	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-06
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	86	114
Toluene-d8	98	86	115
4-Bromofluorobenzene	105	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.32
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	1.3
Hexane	<0.25	o-Xylene	0.56
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.11
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.26
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	1.0
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.98	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.53
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-07
Date Analyzed:	01/31/24	Data File:	013115.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	86	86	114
Toluene-d8	122 ip	86	115
4-Bromofluorobenzene	98	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.035
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	69 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	240 ve
Hexane	8.9	o-Xylene	120 ve
Methylene chloride	<0.5	Styrene	3.6
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	8.3
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	34 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	66 ve
Chloroform	0.56	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	120 ve
Benzene	0.13	sec-Butylbenzene	4.0
Trichloroethene	<0.02	p-Isopropyltoluene	1.9
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	120 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	43 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-07 1/50
Date Analyzed:	02/01/24	Data File:	020113.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	86	114
Toluene-d8	104	86	115
4-Bromofluorobenzene	107	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	100
Ethylbenzene	63
m,p-Xylene	260
o-Xylene	94
n-Propylbenzene	28
1,3,5-Trimethylbenzene	56
1,2,4-Trimethylbenzene	190
Naphthalene	35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-08 1/0.5
Date Analyzed:	01/31/24	Data File:	013131.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	100	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-09 1/0.5
Date Analyzed:	01/31/24	Data File:	013132.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	99	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0042
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0027	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-10 1/0.5
Date Analyzed:	01/31/24	Data File:	013133.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	79	128
Toluene-d8	96	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.0010
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0049
Hexane	<0.25	o-Xylene	0.0016
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0034	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-11 1/0.5
Date Analyzed:	01/31/24	Data File:	013134.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0027
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.0057
Hexane	<0.25	o-Xylene	0.0019
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0035	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-12 1/0.5
Date Analyzed:	01/31/24	Data File:	013135.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-14
Date Analyzed:	01/31/24	Data File:	013118.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	86	114
Toluene-d8	136 ip	86	115
4-Bromofluorobenzene	115	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.037
Vinyl chloride	<0.05	Dibromochloromethane	0.10
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	120 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	400 ve
Hexane	49 ve	o-Xylene	250 ve
Methylene chloride	<0.5	Styrene	8.7
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	18 ve
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	73 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	110 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	180 ve
Benzene	1.5	sec-Butylbenzene	8.5
Trichloroethene	<0.02	p-Isopropyltoluene	3.9
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	5.0	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	250 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	75 ve
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-14 1/500
Date Analyzed:	02/01/24	Data File:	020114.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	86	114
Toluene-d8	97	86	115
4-Bromofluorobenzene	108	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	430
Ethylbenzene	180
m,p-Xylene	800
o-Xylene	330
Isopropylbenzene	<25
n-Propylbenzene	79
1,3,5-Trimethylbenzene	130
1,2,4-Trimethylbenzene	460
Naphthalene	96

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15 1/0.5
Date Analyzed:	02/01/24	Data File:	020118.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0022
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	0.12
Acetone	<5 k	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	0.46
Hexane	<0.25	o-Xylene	0.16
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	0.051
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1 k	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.22
Benzene	0.013	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.45	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.18
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 k		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S9 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-16 1/0.5
Date Analyzed:	02/23/24 11:21	Data File:	022312.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	84	120
Toluene-d8	92	73	128
4-Bromofluorobenzene	104	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-2-S10 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-17 1/0.5
Date Analyzed:	02/23/24 10:58	Data File:	022311.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	84	120
Toluene-d8	92	73	128
4-Bromofluorobenzene	104	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S5 ht	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	401358-26 1/0.5
Date Analyzed:	02/23/24 10:34	Data File:	022310.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	84	120
Toluene-d8	93	73	128
4-Bromofluorobenzene	105	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-18 1/0.5
Date Analyzed:	01/31/24	Data File:	013136.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-19 1/0.5
Date Analyzed:	01/31/24	Data File:	013137.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	105	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0018	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-20 1/0.5
Date Analyzed:	01/31/24	Data File:	013138.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	103	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.0021
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.0030	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-21 1/0.5
Date Analyzed:	01/31/24	Data File:	013139.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	79	128
Toluene-d8	97	84	121
4-Bromofluorobenzene	99	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-23
Date Analyzed:	01/31/24	Data File:	013119.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	86	114
Toluene-d8	135 ip	86	115
4-Bromofluorobenzene	116	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.16
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	150 ve
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	430 ve
Hexane	260 ve	o-Xylene	240 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	25 ve
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	93 ve
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	120 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	200 ve
Benzene	<0.03	sec-Butylbenzene	9.3
Trichloroethene	<0.02	p-Isopropyltoluene	4.1
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	130 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	76 ve
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-23 1/500
Date Analyzed:	02/01/24	Data File:	020115.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	114
Toluene-d8	100	86	115
4-Bromofluorobenzene	107	83	116

Compounds:	Concentration mg/kg (ppm)
Toluene	160
Hexane	250
Ethylbenzene	280
m,p-Xylene	1,000
o-Xylene	350
Isopropylbenzene	29
n-Propylbenzene	97
1,3,5-Trimethylbenzene	150
1,2,4-Trimethylbenzene	520
Naphthalene	86

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-24 1/0.5
Date Analyzed:	01/31/24	Data File:	013140.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	102	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-25 1/0.5
Date Analyzed:	01/31/24	Data File:	013141.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	79	128
Toluene-d8	98	84	121
4-Bromofluorobenzene	101	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-27
Date Analyzed:	01/31/24	Data File:	013116.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	86	114
Toluene-d8	102	86	115
4-Bromofluorobenzene	124 ip	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	4.6
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	18
Hexane	0.89	o-Xylene	3.4
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.81
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	3.4
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	7.2
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	16
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	0.33
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	5.2	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	4.6
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-28
Date Analyzed:	01/31/24	Data File:	013117.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	86	114
Toluene-d8	101	86	115
4-Bromofluorobenzene	113	83	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	3.3
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	13
Hexane	1.1	o-Xylene	2.7
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.57
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.6
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	5.1
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	9.8
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	0.22
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	2.9	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.6
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0243 mb 1/0.5
Date Analyzed:	01/31/24	Data File:	013126.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	111	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0247 mb 1/0.5
Date Analyzed:	01/31/24	Data File:	013125.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	79	128
Toluene-d8	99	84	121
4-Bromofluorobenzene	104	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.001
Acetone	<5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.003
Hexane	<0.25	o-Xylene	<0.0015
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	04-0270 mb 1/0.5
Date Analyzed:	02/01/24	Data File:	020110.D
Matrix:	Soil	Instrument:	GCMS11
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	110	79	128
Toluene-d8	100	84	121
4-Bromofluorobenzene	106	84	116

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.002
Vinyl chloride	<0.002	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.005
Chloroethane	<0.1	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5 ca	Ethylbenzene	<0.001
Acetone	<5 k	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.002	m,p-Xylene	<0.002
Hexane	<0.25	o-Xylene	<0.001
Methylene chloride	<0.2	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.002	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.002	Bromoform	<0.05
1,1-Dichloroethane	<0.002	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.002	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1 k	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.002	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.002	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.001	sec-Butylbenzene	<0.05
Trichloroethene	<0.002	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.001	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.01
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 k		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition LL

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/23/24	Lab ID:	04-0384 mb 1/0.5
Date Analyzed:	02/23/24	Data File:	022309.D
Matrix:	Soil	Instrument:	GCMS13
Units:	mg/kg (ppm) Dry Weight	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	84	120
Toluene-d8	103	73	128
4-Bromofluorobenzene	106	57	146

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.002
Chloroethane	<0.1
1,1-Dichloroethene	<0.002
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.002
1,1-Dichloroethane	<0.002
cis-1,2-Dichloroethene	<0.002
1,2-Dichloroethane (EDC)	<0.002
1,1,1-Trichloroethane	<0.002
Trichloroethene	<0.002
Tetrachloroethene	<0.002

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	HA-1-GW	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-29
Date Analyzed:	01/31/24	Data File:	013113.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	115	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	104	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	HA-2-GW	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	401358-30
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	102	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/31/24	Lab ID:	04-0246 mb
Date Analyzed:	01/31/24	Data File:	013109.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	78	126
Toluene-d8	90	84	115
4-Bromofluorobenzene	105	72	130

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<0.2
1,1,1-Trichloroethane	<1
Trichloroethene	<0.5
Tetrachloroethene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-01 1/5
Date Analyzed:	01/31/24	Data File:	013113.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	90	10	198
2-Fluorobiphenyl	98	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	103	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-02 1/5
Date Analyzed:	01/30/24	Data File:	013011.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	10	198
2-Fluorobiphenyl	85	45	117
2,4,6-Tribromophenol	83	11	158
Terphenyl-d14	88	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-03 1/5
Date Analyzed:	01/31/24	Data File:	013114.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	86	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-04 1/5
Date Analyzed:	01/31/24	Data File:	013115.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	65	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	81	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-06 1/5
Date Analyzed:	01/31/24	Data File:	013116.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.29
2-Methylnaphthalene	1.2
1-Methylnaphthalene	0.60
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.037
Anthracene	0.018
Fluoranthene	<0.01
Pyrene	0.011
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-1-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-07 1/5
Date Analyzed:	01/31/24	Data File:	013117.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	10	198
2-Fluorobiphenyl	76	45	117
2,4,6-Tribromophenol	87	11	158
Terphenyl-d14	80	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.35
2-Methylnaphthalene	1.0
1-Methylnaphthalene	0.46
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.025
Anthracene	0.012
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S1.5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-08 1/5
Date Analyzed:	01/30/24	Data File:	013016.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67	10	198
2-Fluorobiphenyl	75	45	117
2,4,6-Tribromophenol	79	11	158
Terphenyl-d14	77	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	0.17
Pyrene	0.32
Benz(a)anthracene	0.16
Chrysene	0.24
Benzo(a)pyrene	0.26
Benzo(b)fluoranthene	0.41
Benzo(k)fluoranthene	0.14
Indeno(1,2,3-cd)pyrene	0.17
Dibenz(a,h)anthracene	0.049
Benzo(g,h,i)perylene	0.13

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-09 1/5
Date Analyzed:	01/31/24	Data File:	013118.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	10	198
2-Fluorobiphenyl	68	45	117
2,4,6-Tribromophenol	79	11	158
Terphenyl-d14	76	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-10 1/5
Date Analyzed:	01/31/24	Data File:	013119.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	61	10	198
2-Fluorobiphenyl	70	45	117
2,4,6-Tribromophenol	84	11	158
Terphenyl-d14	78	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-11 1/5
Date Analyzed:	02/01/24	Data File:	020116.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	10	198
2-Fluorobiphenyl	72	45	117
2,4,6-Tribromophenol	89	11	158
Terphenyl-d14	79	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.010
2-Methylnaphthalene	0.18
1-Methylnaphthalene	0.097
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S5	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-12 1/5
Date Analyzed:	01/30/24	Data File:	013010.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	71	16	137
2-Fluorobiphenyl	76	46	122
2,4,6-Tribromophenol	79	17	154
Terphenyl-d14	74	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14 1/5
Date Analyzed:	01/30/24	Data File:	013011.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	16	137
2-Fluorobiphenyl	72	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	69	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	24 ve
2-Methylnaphthalene	27 ve
1-Methylnaphthalene	13 ve
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.21
Anthracene	0.12
Fluoranthene	0.036
Pyrene	0.052
Benz(a)anthracene	0.050
Chrysene	0.019
Benzo(a)pyrene	0.022
Benzo(b)fluoranthene	0.012
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.014

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S7	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-14 1/250
Date Analyzed:	02/01/24	Data File:	020117.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	105 d	10	198
2-Fluorobiphenyl	80 d	45	117
2,4,6-Tribromophenol	184 d	11	158
Terphenyl-d14	75 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	43
2-Methylnaphthalene	42
1-Methylnaphthalene	18

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-2-S8	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	401358-15 1/5
Date Analyzed:	02/02/24	Data File:	020140.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	84	16	137
2-Fluorobiphenyl	84	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	81	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.019
2-Methylnaphthalene	0.029
1-Methylnaphthalene	0.010
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S1	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-18 1/5
Date Analyzed:	01/30/24	Data File:	013012.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	16	137
2-Fluorobiphenyl	65	46	122
2,4,6-Tribromophenol	77	17	154
Terphenyl-d14	67	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S2	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-19 1/5
Date Analyzed:	01/30/24	Data File:	013013.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	55	16	137
2-Fluorobiphenyl	63	46	122
2,4,6-Tribromophenol	72	17	154
Terphenyl-d14	66	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-20 1/5
Date Analyzed:	01/30/24	Data File:	013014.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	67	16	137
2-Fluorobiphenyl	72	46	122
2,4,6-Tribromophenol	80	17	154
Terphenyl-d14	72	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-21 1/5
Date Analyzed:	01/30/24	Data File:	013015.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	64	16	137
2-Fluorobiphenyl	69	46	122
2,4,6-Tribromophenol	75	17	154
Terphenyl-d14	68	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23 1/5
Date Analyzed:	01/30/24	Data File:	013016.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68	16	137
2-Fluorobiphenyl	71	46	122
2,4,6-Tribromophenol	83	17	154
Terphenyl-d14	70	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	4.7
2-Methylnaphthalene	11 ve
1-Methylnaphthalene	4.8
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.11
Anthracene	0.062
Fluoranthene	0.021
Pyrene	0.028
Benz(a)anthracene	0.028
Chrysene	<0.01
Benzo(a)pyrene	0.011
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	HA-3-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-23 1/50
Date Analyzed:	02/01/24	Data File:	020118.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85 d	10	198
2-Fluorobiphenyl	86 d	45	117
2,4,6-Tribromophenol	95 d	11	158
Terphenyl-d14	90 d	50	124

Compounds:	Concentration mg/kg (ppm)
2-Methylnaphthalene	14

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S3	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-24 1/5
Date Analyzed:	01/30/24	Data File:	013017.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	53	16	137
2-Fluorobiphenyl	62	46	122
2,4,6-Tribromophenol	64	17	154
Terphenyl-d14	63	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.010
2-Methylnaphthalene	0.026
1-Methylnaphthalene	0.011
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S4	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-25 1/5
Date Analyzed:	01/30/24	Data File:	013018.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	57	16	137
2-Fluorobiphenyl	66	46	122
2,4,6-Tribromophenol	67	17	154
Terphenyl-d14	64	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-S6	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-27 1/5
Date Analyzed:	01/30/24	Data File:	013019.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	16	137
2-Fluorobiphenyl	76	46	122
2,4,6-Tribromophenol	83	17	154
Terphenyl-d14	71	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.49
2-Methylnaphthalene	0.60
1-Methylnaphthalene	0.25
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.020
Phenanthrene	0.030
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-DUP	Client:	Haley & Aldrich, Inc
Date Received:	01/29/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	401358-28 1/5
Date Analyzed:	01/30/24	Data File:	013020.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	69	16	137
2-Fluorobiphenyl	71	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	68	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.35
2-Methylnaphthalene	0.42
1-Methylnaphthalene	0.18
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	0.013
Phenanthrene	0.020
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	04-0260 mb 1/5
Date Analyzed:	01/31/24	Data File:	013108.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	88	10	198
2-Fluorobiphenyl	95	45	117
2,4,6-Tribromophenol	93	11	158
Terphenyl-d14	102	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	01/30/24	Lab ID:	04-0253 mb2 1/5
Date Analyzed:	02/01/24	Data File:	020109.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	104	10	198
2-Fluorobiphenyl	107	45	117
2,4,6-Tribromophenol	108	11	158
Terphenyl-d14	108	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/01/24	Lab ID:	04-0263 mb2 1/5
Date Analyzed:	02/02/24	Data File:	020139.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	94	16	137
2-Fluorobiphenyl	91	46	122
2,4,6-Tribromophenol	76	17	154
Terphenyl-d14	87	31	167

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358
Date Extracted: 01/31/24
Date Analyzed: 01/31/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
HA-1-GW 401358-29	1,200
HA-2-GW 401358-30	1,200
HA-3-GW 401358-31	8,300
Dup-01 401358-32	7,200
Method Blank I4-0069 MB	<5

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 401389-42 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	40	8.9	88 b	90 b	50-150	2 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	40	112	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401331-31 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	1.0	<0.04	69	70	50-150	1
Toluene	mg/kg (ppm)	1.0	<0.04	68	70	50-150	3
Ethylbenzene	mg/kg (ppm)	1.0	<0.04	67	71	50-150	6
Xylenes	mg/kg (ppm)	3.0	<0.12	67	73	50-150	9
Gasoline	mg/kg (ppm)	40	<10	68	70	50-150	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	92	70-130
Toluene	mg/kg (ppm)	1.0	93	70-130
Ethylbenzene	mg/kg (ppm)	1.0	97	70-130
Xylenes	mg/kg (ppm)	3.0	100	70-130
Gasoline	mg/kg (ppm)	40	107	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401350-31 Matrix Spike

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	1.0	<0.02	83	86	50-150	4
Toluene	mg/kg (ppm)	1.0	<0.02	79	81	50-150	2
Ethylbenzene	mg/kg (ppm)	1.0	<0.02	76	78	50-150	3
Xylenes	mg/kg (ppm)	3.0	<0.06	77	77	50-150	0
Gasoline	mg/kg (ppm)	40	<5	97	92	50-150	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	1.0	97	70-130
Toluene	mg/kg (ppm)	1.0	95	70-130
Ethylbenzene	mg/kg (ppm)	1.0	89	70-130
Xylenes	mg/kg (ppm)	3.0	87	70-130
Gasoline	mg/kg (ppm)	40	100	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 401358-29 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	1.8	1.8	0
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	70-130
Toluene	ug/L (ppb)	50	96	70-130
Ethylbenzene	ug/L (ppb)	50	90	70-130
Xylenes	ug/L (ppb)	150	87	70-130
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401331-31 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	200	108	110	64-136	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401358-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	110	116	64-136	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 401358-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	(Wet wt) Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	84	84	64-136	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	84	78-121

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	100	65-151	4

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401358-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	100	95	75-125	5
Lead	mg/kg (ppm)	50	<5	96	94	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	98	80-120
Lead	mg/kg (ppm)	50	95	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 401358-27 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	113	99	75-125	13
Lead	mg/kg (ppm)	50	<5	104	97	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	97	80-120
Lead	mg/kg (ppm)	50	99	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 402008-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	102	99	75-125	3
Lead	mg/kg (ppm)	50	<5	104	103	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	94	80-120
Lead	mg/kg (ppm)	50	98	80-120

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	68	68	10-142	0
Chloromethane	mg/kg (ppm)	2	<0.5	93	98	10-126	5
Vinyl chloride	mg/kg (ppm)	2	<0.05	93	97	10-138	4
Bromomethane	mg/kg (ppm)	2	<0.5	94	90	10-163	4
Chloroethane	mg/kg (ppm)	2	<0.5	93	89	10-176	4
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	98	94	10-176	4
Acetone	mg/kg (ppm)	10	<5	99	93	10-163	6
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	101	100	10-160	1
Hexane	mg/kg (ppm)	2	<0.25	107	104	10-137	3
Methylene chloride	mg/kg (ppm)	2	<0.5	95	93	10-156	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	102	105	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	101	98	14-137	3
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	101	101	19-140	0
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	107	109	10-158	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	97	99	25-135	2
Chloroform	mg/kg (ppm)	2	<0.05	101	104	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	101	99	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	110	107	12-160	3
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	101	101	10-156	0
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	103	101	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	103	105	9-164	2
Benzene	mg/kg (ppm)	2	<0.03	100	100	29-129	0
Trichloroethene	mg/kg (ppm)	2	<0.02	99	101	21-139	2
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	101	100	30-135	1
Bromodichloromethane	mg/kg (ppm)	2	<0.05	104	102	23-155	2
Dibromomethane	mg/kg (ppm)	2	<0.05	99	99	23-145	0
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	102	101	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	104	107	28-144	3
Toluene	mg/kg (ppm)	2	<0.05	97	102	35-130	5
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	101	104	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	106	108	10-205	2
2-Hexanone	mg/kg (ppm)	10	<0.5	98	102	15-166	4
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	107	106	31-137	1
Tetrachloroethene	mg/kg (ppm)	2	<0.025	103	101	20-133	2
Dibromochloromethane	mg/kg (ppm)	2	<0.05	103	107	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	104	106	28-142	2
Chlorobenzene	mg/kg (ppm)	2	<0.05	100	102	32-129	2
Ethylbenzene	mg/kg (ppm)	2	<0.05	102	103	32-137	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	100	106	31-143	6
m,p-Xylene	mg/kg (ppm)	4	<0.1	101	103	34-136	2
o-Xylene	mg/kg (ppm)	2	<0.05	99	100	33-134	1
Styrene	mg/kg (ppm)	2	<0.05	101	104	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	100	102	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	104	109	21-156	5
n-Propylbenzene	mg/kg (ppm)	2	<0.05	106	103	23-146	3
Bromobenzene	mg/kg (ppm)	2	<0.05	108	107	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	105	18-149	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	110	104	28-140	6
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	110	110	25-144	0
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	102	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	103	103	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	103	101	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	105	103	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	106	106	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	107	106	21-149	1
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	102	101	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	104	102	29-129	2
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	102	101	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	104	102	11-161	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	105	103	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	118	111	10-142	6
Naphthalene	mg/kg (ppm)	2	<0.05	104	102	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	107	107	20-144	0

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	76	10-146
Chloromethane	mg/kg (ppm)	2	92	27-133
Vinyl chloride	mg/kg (ppm)	2	94	22-139
Bromomethane	mg/kg (ppm)	2	98	10-201
Chloroethane	mg/kg (ppm)	2	92	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	94	10-196
Acetone	mg/kg (ppm)	10	91	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	102	47-128
Hexane	mg/kg (ppm)	2	97	43-142
Methylene chloride	mg/kg (ppm)	2	88	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	100	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	96	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	99	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	100	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	95	64-135
Chloroform	mg/kg (ppm)	2	98	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	82	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	103	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	96	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	96	64-136
Carbon tetrachloride	mg/kg (ppm)	2	101	60-139
Benzene	mg/kg (ppm)	2	96	65-136
Trichloroethene	mg/kg (ppm)	2	94	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	95	61-145
Bromodichloromethane	mg/kg (ppm)	2	103	57-126
Dibromomethane	mg/kg (ppm)	2	95	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	99	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	101	65-143
Toluene	mg/kg (ppm)	2	96	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	101	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	102	62-131
2-Hexanone	mg/kg (ppm)	10	97	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	102	67-128
Tetrachloroethene	mg/kg (ppm)	2	100	68-128
Dibromochloromethane	mg/kg (ppm)	2	103	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	99	66-129
Chlorobenzene	mg/kg (ppm)	2	96	67-128
Ethylbenzene	mg/kg (ppm)	2	99	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	101	64-121
m,p-Xylene	mg/kg (ppm)	4	99	68-128
o-Xylene	mg/kg (ppm)	2	98	67-129
Styrene	mg/kg (ppm)	2	98	67-129
Isopropylbenzene	mg/kg (ppm)	2	98	68-128
Bromoform	mg/kg (ppm)	2	106	56-132
n-Propylbenzene	mg/kg (ppm)	2	107	68-129
Bromobenzene	mg/kg (ppm)	2	107	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	107	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	110	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	114	61-137
2-Chlorotoluene	mg/kg (ppm)	2	104	69-128
4-Chlorotoluene	mg/kg (ppm)	2	107	67-127
tert-Butylbenzene	mg/kg (ppm)	2	106	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	106	69-128
sec-Butylbenzene	mg/kg (ppm)	2	107	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	109	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	104	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	107	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	106	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	111	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	107	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	118	50-153
Naphthalene	mg/kg (ppm)	2	106	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	111	61-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-24 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	100	103	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	120	125	10-126	4
Vinyl chloride	mg/kg (ppm)	2	<0.05	119	118	10-138	1
Bromomethane	mg/kg (ppm)	2	<0.5	101	100	10-163	1
Chloroethane	mg/kg (ppm)	2	<0.5	99	100	10-176	1
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	109	109	10-176	0
Acetone	mg/kg (ppm)	10	<5	119	131	10-163	10
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	121	119	10-160	2
Hexane	mg/kg (ppm)	2	<0.25	133	125	10-137	6
Methylene chloride	mg/kg (ppm)	2	<0.5	123	121	10-156	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	135	138	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	127	130	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	135	133	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	133	138	10-158	4
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	131	130	25-135	1
Chloroform	mg/kg (ppm)	2	<0.05	132	132	21-145	0
2-Butanone (MEK)	mg/kg (ppm)	10	<1	142	143	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	141	140	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	129	132	10-156	2
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	134	128	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	139	136	9-164	2
Benzene	mg/kg (ppm)	2	<0.03	132 vo	130 vo	29-129	2
Trichloroethene	mg/kg (ppm)	2	<0.02	128	128	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	134	133	30-135	1
Bromodichloromethane	mg/kg (ppm)	2	<0.05	140	139	23-155	1
Dibromomethane	mg/kg (ppm)	2	<0.05	130	129	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	139	138	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	142	139	28-144	2
Toluene	mg/kg (ppm)	2	<0.05	135 vo	138 vo	35-130	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	140	146	26-149	4
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	145	150	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	143	144	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	142 vo	148 vo	31-137	4
Tetrachloroethene	mg/kg (ppm)	2	<0.025	135 vo	133	20-133	1
Dibromochloromethane	mg/kg (ppm)	2	<0.05	138	143	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	141	143 vo	28-142	1
Chlorobenzene	mg/kg (ppm)	2	<0.05	135 vo	140 vo	32-129	4
Ethylbenzene	mg/kg (ppm)	2	<0.05	139 vo	142 vo	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	138	139	31-143	1
m,p-Xylene	mg/kg (ppm)	4	<0.1	138 vo	139 vo	34-136	1
o-Xylene	mg/kg (ppm)	2	<0.05	135 vo	138 vo	33-134	2
Styrene	mg/kg (ppm)	2	<0.05	140 vo	143 vo	35-137	2
Isopropylbenzene	mg/kg (ppm)	2	<0.05	137	137	31-142	0
Bromoform	mg/kg (ppm)	2	<0.05	141	146	21-156	3
n-Propylbenzene	mg/kg (ppm)	2	<0.05	146	141	23-146	3
Bromobenzene	mg/kg (ppm)	2	<0.05	146 vo	143 vo	34-130	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	147	143	18-149	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	149 vo	146 vo	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	157 vo	153 vo	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	143 vo	140 vo	31-134	2
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	145 vo	142 vo	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	141 vo	139 vo	30-137	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	146	141	10-182	3
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	148 vo	140	23-145	6
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	148	142	21-149	4
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	134 vo	134 vo	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	141 vo	138 vo	29-129	2
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	139 vo	139 vo	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	146	148	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	138	139	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	151 vo	147 vo	10-142	3
Naphthalene	mg/kg (ppm)	2	<0.05	142	140	14-157	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	144	142	20-144	1

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	107	27-133
Vinyl chloride	mg/kg (ppm)	2	107	22-139
Bromomethane	mg/kg (ppm)	2	102	10-201
Chloroethane	mg/kg (ppm)	2	99	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	102	10-196
Acetone	mg/kg (ppm)	10	102	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	111	47-128
Hexane	mg/kg (ppm)	2	112	43-142
Methylene chloride	mg/kg (ppm)	2	99	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	112	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	103	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	109	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	110	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	106	64-135
Chloroform	mg/kg (ppm)	2	108	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	107	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	113	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	107	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	109	64-136
Carbon tetrachloride	mg/kg (ppm)	2	111	60-139
Benzene	mg/kg (ppm)	2	105	65-136
Trichloroethene	mg/kg (ppm)	2	101	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	107	61-145
Bromodichloromethane	mg/kg (ppm)	2	112	57-126
Dibromomethane	mg/kg (ppm)	2	107	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	113	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	110	65-143
Toluene	mg/kg (ppm)	2	110	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	116	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	120	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	120	67-128
Tetrachloroethene	mg/kg (ppm)	2	111	68-128
Dibromochloromethane	mg/kg (ppm)	2	114	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	119	66-129
Chlorobenzene	mg/kg (ppm)	2	110	67-128
Ethylbenzene	mg/kg (ppm)	2	114	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	115	64-121
m,p-Xylene	mg/kg (ppm)	4	112	68-128
o-Xylene	mg/kg (ppm)	2	110	67-129
Styrene	mg/kg (ppm)	2	112	67-129
Isopropylbenzene	mg/kg (ppm)	2	111	68-128
Bromoform	mg/kg (ppm)	2	119	56-132
n-Propylbenzene	mg/kg (ppm)	2	113	68-129
Bromobenzene	mg/kg (ppm)	2	116	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	115	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	117	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	123	61-137
2-Chlorotoluene	mg/kg (ppm)	2	112	69-128
4-Chlorotoluene	mg/kg (ppm)	2	115	67-127
tert-Butylbenzene	mg/kg (ppm)	2	111	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	114	69-128
sec-Butylbenzene	mg/kg (ppm)	2	115	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	114	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	109	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	112	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	110	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	116	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	112	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	120	50-153
Naphthalene	mg/kg (ppm)	2	113	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	115	61-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401358-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2	<0.5	71	69	10-142	3
Chloromethane	mg/kg (ppm)	2	<0.5	98	96	10-126	2
Vinyl chloride	mg/kg (ppm)	2	<0.05	95	90	10-138	5
Bromomethane	mg/kg (ppm)	2	<0.5	87	80	10-163	8
Chloroethane	mg/kg (ppm)	2	<0.5	83	75	10-176	10
Trichlorofluoromethane	mg/kg (ppm)	2	<0.5	89	86	10-176	3
Acetone	mg/kg (ppm)	10	<5	91	88	10-163	3
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	100	96	10-160	4
Hexane	mg/kg (ppm)	2	<0.25	104	103	10-137	1
Methylene chloride	mg/kg (ppm)	2	<0.5	96	90	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	<0.05	106	103	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	100	96	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	103	99	19-140	4
2,2-Dichloropropane	mg/kg (ppm)	2	<0.05	109	98	10-158	11
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	100	95	25-135	5
Chloroform	mg/kg (ppm)	2	<0.05	103	100	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	10	<1	105	101	19-147	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	109	105	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	101	97	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2	<0.05	100	101	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2	<0.05	105	104	9-164	1
Benzene	mg/kg (ppm)	2	<0.03	102	98	29-129	4
Trichloroethene	mg/kg (ppm)	2	<0.02	98	95	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2	<0.05	102	100	30-135	2
Bromodichloromethane	mg/kg (ppm)	2	<0.05	103	103	23-155	0
Dibromomethane	mg/kg (ppm)	2	<0.05	101	95	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	10	<1	106	102	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	110	104	28-144	6
Toluene	mg/kg (ppm)	2	<0.05	105	102	35-130	3
trans-1,3-Dichloropropene	mg/kg (ppm)	2	<0.05	109	108	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2	<0.05	112	109	10-205	3
2-Hexanone	mg/kg (ppm)	10	<0.5	105	104	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2	<0.05	115	107	31-137	7
Tetrachloroethene	mg/kg (ppm)	2	<0.025	103	102	20-133	1
Dibromochloromethane	mg/kg (ppm)	2	<0.05	107	107	28-150	0
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	<0.05	107	107	28-142	0
Chlorobenzene	mg/kg (ppm)	2	<0.05	106	101	32-129	5
Ethylbenzene	mg/kg (ppm)	2	<0.05	107	105	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	107	100	31-143	7
m,p-Xylene	mg/kg (ppm)	4	<0.1	105	102	34-136	3
o-Xylene	mg/kg (ppm)	2	<0.05	106	98	33-134	8
Styrene	mg/kg (ppm)	2	<0.05	106	103	35-137	3
Isopropylbenzene	mg/kg (ppm)	2	<0.05	104	102	31-142	2
Bromoform	mg/kg (ppm)	2	<0.05	109	108	21-156	1
n-Propylbenzene	mg/kg (ppm)	2	<0.05	105	107	23-146	2
Bromobenzene	mg/kg (ppm)	2	<0.05	105	107	34-130	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	<0.05	109	109	18-149	0
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	<0.05	109	110	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2	<0.05	113	117	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2	<0.05	106	106	31-134	0
4-Chlorotoluene	mg/kg (ppm)	2	<0.05	107	109	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2	<0.05	105	102	30-137	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	<0.05	106	104	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2	<0.05	108	109	23-145	1
p-Isopropyltoluene	mg/kg (ppm)	2	<0.05	108	110	21-149	2
1,3-Dichlorobenzene	mg/kg (ppm)	2	<0.05	101	101	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2	<0.05	105	105	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2	<0.05	104	103	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	<0.5	108	105	11-161	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	<0.25	104	105	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2	<0.25	112	117	10-142	4
Naphthalene	mg/kg (ppm)	2	<0.05	105	106	14-157	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	<0.25	107	106	20-144	1

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2	85	10-146
Chloromethane	mg/kg (ppm)	2	108	27-133
Vinyl chloride	mg/kg (ppm)	2	107	22-139
Bromomethane	mg/kg (ppm)	2	95	10-201
Chloroethane	mg/kg (ppm)	2	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2	95	10-196
Acetone	mg/kg (ppm)	10	97	52-141
1,1-Dichloroethene	mg/kg (ppm)	2	107	47-128
Hexane	mg/kg (ppm)	2	106	43-142
Methylene chloride	mg/kg (ppm)	2	101	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2	115	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2	107	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	110	64-135
2,2-Dichloropropane	mg/kg (ppm)	2	118	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2	107	64-135
Chloroform	mg/kg (ppm)	2	111	61-139
2-Butanone (MEK)	mg/kg (ppm)	10	94	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	116	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	107	62-131
1,1-Dichloropropene	mg/kg (ppm)	2	108	64-136
Carbon tetrachloride	mg/kg (ppm)	2	113	60-139
Benzene	mg/kg (ppm)	2	108	65-136
Trichloroethene	mg/kg (ppm)	2	105	63-139
1,2-Dichloropropane	mg/kg (ppm)	2	106	61-145
Bromodichloromethane	mg/kg (ppm)	2	113	57-126
Dibromomethane	mg/kg (ppm)	2	105	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	10	109	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2	112	65-143
Toluene	mg/kg (ppm)	2	106	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2	117	65-131
1,1,2-Trichloroethane	mg/kg (ppm)	2	118	62-131
2-Hexanone	mg/kg (ppm)	10	113	33-152
1,3-Dichloropropane	mg/kg (ppm)	2	118	67-128
Tetrachloroethene	mg/kg (ppm)	2	107	68-128
Dibromochloromethane	mg/kg (ppm)	2	115	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2	112	66-129
Chlorobenzene	mg/kg (ppm)	2	107	67-128
Ethylbenzene	mg/kg (ppm)	2	110	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2	112	64-121
m,p-Xylene	mg/kg (ppm)	4	107	68-128
o-Xylene	mg/kg (ppm)	2	108	67-129
Styrene	mg/kg (ppm)	2	112	67-129
Isopropylbenzene	mg/kg (ppm)	2	108	68-128
Bromoform	mg/kg (ppm)	2	116	56-132
n-Propylbenzene	mg/kg (ppm)	2	109	68-129
Bromobenzene	mg/kg (ppm)	2	111	69-128
1,3,5-Trimethylbenzene	mg/kg (ppm)	2	112	69-129
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2	115	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2	119	61-137
2-Chlorotoluene	mg/kg (ppm)	2	109	69-128
4-Chlorotoluene	mg/kg (ppm)	2	108	67-127
tert-Butylbenzene	mg/kg (ppm)	2	107	69-129
1,2,4-Trimethylbenzene	mg/kg (ppm)	2	108	69-128
sec-Butylbenzene	mg/kg (ppm)	2	110	69-130
p-Isopropyltoluene	mg/kg (ppm)	2	111	69-130
1,3-Dichlorobenzene	mg/kg (ppm)	2	103	69-127
1,4-Dichlorobenzene	mg/kg (ppm)	2	107	68-126
1,2-Dichlorobenzene	mg/kg (ppm)	2	106	69-127
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2	114	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2	109	64-135
Hexachlorobutadiene	mg/kg (ppm)	2	115	50-153
Naphthalene	mg/kg (ppm)	2	110	62-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2	111	61-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402324-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2	<0.05	69	73	10-138	6
Chloroethane	mg/kg (ppm)	2	<0.5	70	70	10-176	0
1,1-Dichloroethene	mg/kg (ppm)	2	<0.05	80	83	10-160	4
Methylene chloride	mg/kg (ppm)	2	<0.5	82	85	10-156	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	79	81	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2	<0.05	81	85	19-140	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2	<0.05	81	84	25-135	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	<0.05	83	86	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2	<0.05	83	87	10-156	5
Trichloroethene	mg/kg (ppm)	2	<0.02	83	84	21-139	1
Tetrachloroethene	mg/kg (ppm)	2	<0.025	81	86	20-133	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2	74	22-139
Chloroethane	mg/kg (ppm)	2	79	10-163
1,1-Dichloroethene	mg/kg (ppm)	2	87	47-128
Methylene chloride	mg/kg (ppm)	2	87	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	2	85	64-132
1,1-Dichloroethane	mg/kg (ppm)	2	87	64-135
cis-1,2-Dichloroethene	mg/kg (ppm)	2	84	64-135
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2	90	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2	90	62-131
Trichloroethene	mg/kg (ppm)	2	85	63-139
Tetrachloroethene	mg/kg (ppm)	2	88	68-128

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 401372-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	<0.02	103	50-150
Chloroethane	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
Methylene chloride	ug/L (ppb)	10	<5	96	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	97	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	102	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	93	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	94	35-149
Tetrachloroethene	ug/L (ppb)	10	<1	104	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	105	90	64-142	15
Chloroethane	ug/L (ppb)	10	104	92	70-130	12
1,1-Dichloroethene	ug/L (ppb)	10	97	86	64-140	12
Methylene chloride	ug/L (ppb)	10	103	90	43-134	13
trans-1,2-Dichloroethene	ug/L (ppb)	10	102	90	70-130	12
1,1-Dichloroethane	ug/L (ppb)	10	104	93	70-130	11
cis-1,2-Dichloroethene	ug/L (ppb)	10	103	90	70-130	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	102	97	70-130	5
1,1,1-Trichloroethane	ug/L (ppb)	10	97	87	70-130	11
Trichloroethene	ug/L (ppb)	10	94	88	70-130	7
Tetrachloroethene	ug/L (ppb)	10	102	95	70-130	7

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401329-12 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	74	78	28-125	5
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	81	83	10-192	2
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	78	79	10-163	1
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	79	84	45-128	6
Acenaphthene	mg/kg (ppm)	0.83	<0.01	76	81	36-125	6
Fluorene	mg/kg (ppm)	0.83	<0.01	81	85	48-121	5
Phenanthrene	mg/kg (ppm)	0.83	<0.01	76	84	46-122	10
Anthracene	mg/kg (ppm)	0.83	<0.01	79	88	30-144	11
Fluoranthene	mg/kg (ppm)	0.83	<0.01	85	93	50-150	9
Pyrene	mg/kg (ppm)	0.83	<0.01	79	80	40-134	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	81	87	50-150	7
Chrysene	mg/kg (ppm)	0.83	<0.01	83	88	50-150	6
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	91	97	50-150	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	84	89	50-150	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	90	95	50-150	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	85	91	40-140	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	80	86	41-136	7
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	75	79	29-139	5

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	87	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	95	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	90	63-113
Acenaphthylene	mg/kg (ppm)	0.83	93	70-130
Acenaphthene	mg/kg (ppm)	0.83	90	66-112
Fluorene	mg/kg (ppm)	0.83	95	67-117
Phenanthrene	mg/kg (ppm)	0.83	93	70-130
Anthracene	mg/kg (ppm)	0.83	97	70-130
Fluoranthene	mg/kg (ppm)	0.83	103	70-130
Pyrene	mg/kg (ppm)	0.83	88	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	94	70-130
Chrysene	mg/kg (ppm)	0.83	98	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	105	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	99	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	106	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	98	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	98	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	94	65-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 401358-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	69	68	28-125	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	73	74	10-192	1
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	69	70	10-163	1
Acenaphthylene	mg/kg (ppm)	0.83	<0.01	71	72	45-128	1
Acenaphthene	mg/kg (ppm)	0.83	<0.01	70	71	36-125	1
Fluorene	mg/kg (ppm)	0.83	<0.01	73	74	48-121	1
Phenanthrene	mg/kg (ppm)	0.83	<0.01	72	71	46-122	1
Anthracene	mg/kg (ppm)	0.83	<0.01	75	73	30-144	3
Fluoranthene	mg/kg (ppm)	0.83	<0.01	79	80	50-150	1
Pyrene	mg/kg (ppm)	0.83	<0.01	70	69	40-134	1
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	75	75	50-150	0
Chrysene	mg/kg (ppm)	0.83	<0.01	78	77	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	84	83	50-150	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	78	77	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	79	80	50-150	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	95	89	40-140	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	91	88	41-136	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	<0.01	87	85	29-139	2

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	73	57-107
2-Methylnaphthalene	mg/kg (ppm)	0.83	78	63-112
1-Methylnaphthalene	mg/kg (ppm)	0.83	74	63-113
Acenaphthylene	mg/kg (ppm)	0.83	77	70-130
Acenaphthene	mg/kg (ppm)	0.83	76	66-112
Fluorene	mg/kg (ppm)	0.83	79	67-117
Phenanthrene	mg/kg (ppm)	0.83	77	70-130
Anthracene	mg/kg (ppm)	0.83	79	70-130
Fluoranthene	mg/kg (ppm)	0.83	83	70-130
Pyrene	mg/kg (ppm)	0.83	73	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	79	70-130
Chrysene	mg/kg (ppm)	0.83	82	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	87	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	80	67-128
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	86	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	94	67-128
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	91	65-130

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	85	84	57-107	1
2-Methylnaphthalene	mg/kg (ppm)	0.83	93	93	63-112	0
1-Methylnaphthalene	mg/kg (ppm)	0.83	88	88	63-113	0
Acenaphthylene	mg/kg (ppm)	0.83	89	89	70-130	0
Acenaphthene	mg/kg (ppm)	0.83	88	87	66-112	1
Fluorene	mg/kg (ppm)	0.83	93	92	67-117	1
Phenanthrene	mg/kg (ppm)	0.83	85	87	70-130	2
Anthracene	mg/kg (ppm)	0.83	88	90	70-130	2
Fluoranthene	mg/kg (ppm)	0.83	96	97	70-130	1
Pyrene	mg/kg (ppm)	0.83	83	83	70-130	0
Benz(a)anthracene	mg/kg (ppm)	0.83	89	91	70-130	2
Chrysene	mg/kg (ppm)	0.83	91	93	70-130	2
Benzo(a)pyrene	mg/kg (ppm)	0.83	100	102	68-120	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	95	96	67-128	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	98	100	70-130	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	103	96	67-129	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	97	91	67-128	6
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	93	86	65-130	8

Date of Report: 02/23/24
Date Received: 01/29/24
Project: Whidbey Marine 0204475-001, F&BI 401358

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L (ppm)	20	98	96	35-146	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

401358

SAMPLE CHAIN OF CUSTODY

01/29/24 VW5/JS/C4/N3

Page # 1 of

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB, EDC, MTBE	Lead, Arsenic	TOC	EPH/VPH	X per HG 1/29/24 ME Notes A-per HG 01/31/24 ME
HA-1-S1	01 A-F	1/26	0915	S	6	X	X			X	X		X	X			~~Hold~~
HA-1-S2	02		0935 ~~1045~~			X	X			X	X		X	X	X		~~Analyze~~
HA-1-S3	03		~~1045~~ 1055			X	X			X	X		X	X			
HA-1-S4	04		~~1055~~ 1105			X	X			X	X		X	X	X		Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-1-S5	05		~~1105~~ 1430			Hold											
HA-1-S6	06		1430			X	X			X	X		X	X	X	A	
HA-1-DUP	07		1500			X	X			X	X		X	X	X	A	
HA-2-S1.5	08	1/24	1305			X	X			X	X		X	X			
HA-2-S2	09		1320			X	X			X	X		X	X			
HA-2-S3	10		1340			X	X			X	X		X	X	X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew DalCalvo	HA	1/29/24	820
Received by:	Erik Young	HA	1/29/24	820
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

401358

SAMPLE CHAIN OF CUSTODY

01/29/24 VW5/ J5/ C4/ N3

Page # 2 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email ~~Heather~~ HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	EPH/VPH ~~PCBs EPA 8082~~	EDB, EDC, MTBE	Lead, Arsenic	cVOCs	TOC	Notes
HA-2-S4	11 A-F	1/24	1445	S	6	X	X			X	X		X	X			~~Hold for~~
HA-2-S5	12		1455			X	X			X	X		X	X		X	~~Analysis~~
HA-2-S6	13		1505			Hold											Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups
HA-2-S7	14	1/25	1045			X	X			X	X	A	X	X		X	
HA-2-S8	15		1055			Hold	A	A		A	A		A	A			
HA-2-S9	16		1500			X	X	X							X		
HA-2-S10	17		1510			X	X	X							X		
HA-3-S1	18	1/23	1040			X	X			X	X		X	X			
HA-3-S2	19		1100			X	X			X	X		X	X			
HA-3-S3	20		1230			X	X			X	X		X	X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/29/24	820
Received by:	Eric Young	RAD	1/29/24	820
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY 01/29/24 VW5/J5/C4/N3

Page # 3 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email HGood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	EPH/VPH ~~PCBs EPA 8082~~	EDB, EDC, MTBE	TOC	cVOCs	TSS	Lead, Arsenic	Notes
HA-3-54	21 A-F		1240	S	6	X	X			X	X		X				X	old for
HA-3-55	22		1250			Hold												Analysis
HA-3-56	23		1640			X	X			X	X	A	X				X	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/VPH follow-ups
MW-23D-53	24	1/22	1200			X	X			X	X		X				X	
MW-23D-54	25		1210			X	X			X	X		X	X			X	
MW-23D-55	26		1220			X	X	X							X			
MW-23D-56	27		1510			X	X			X	X	A	X	X			X	
MW-23D-DUP	28		1530			X	X			X	X		X	X			X	
HA-1-GW	29 A/H	1/26	1200	W	8	X	X	X							X	X		
HA-2-GW	30 A/H	1/24	1600		8	X	X	X							X	X		

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	1/24/24	820
Received by:	Eric Flown	F&B	1/29/24	830
Relinquished by:				
Received by:		Samples received at 3 °C		

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401358

SAMPLE CHAIN OF CUSTODY

01/29/24

VW5/J5/C4/~~V~~ N3/~~4~~

Page # 4 of 4

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0204475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ~~/~~ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

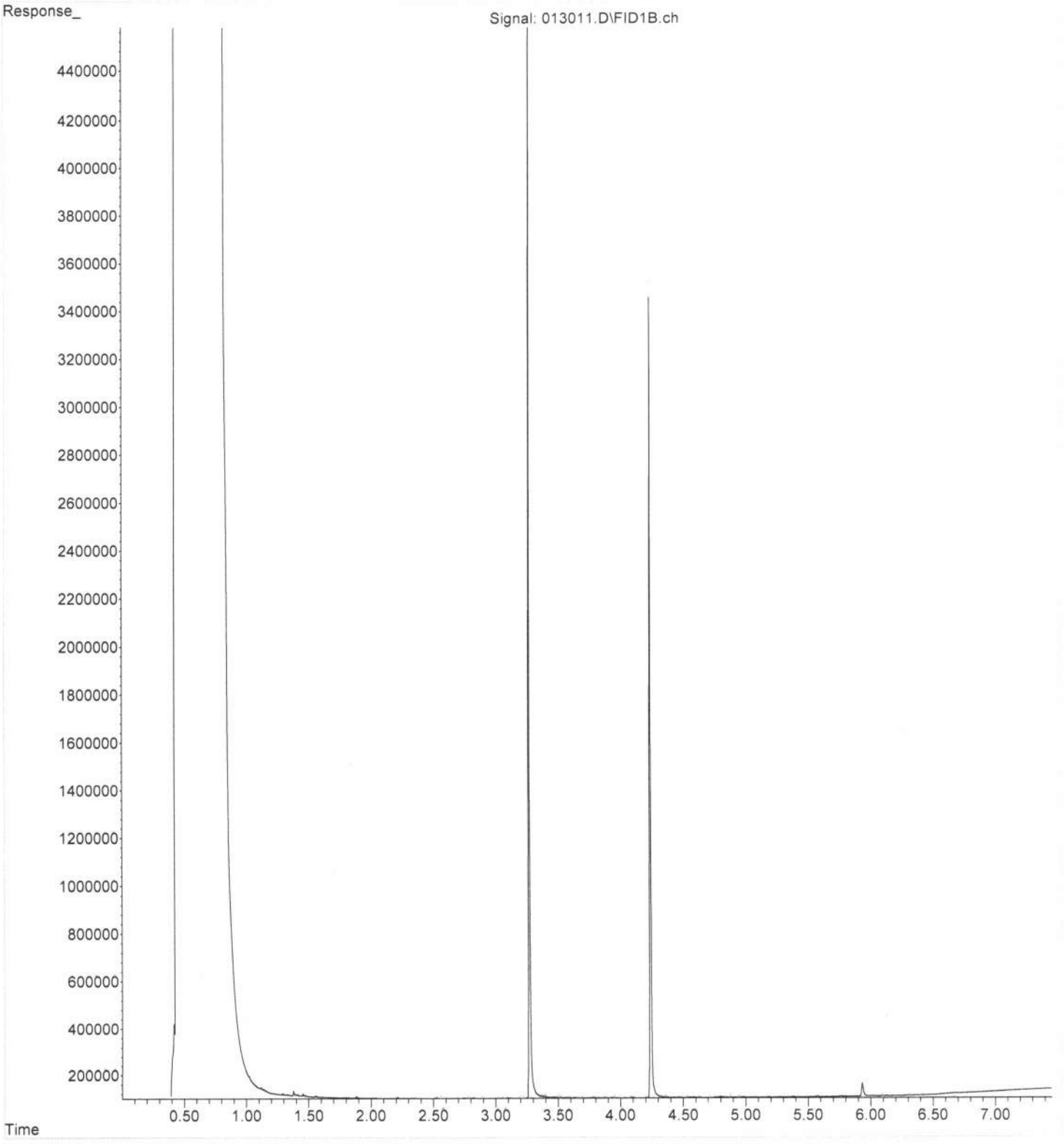
SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS				Notes
HA-3-GW	31 A-G	1/23	1400	W	8	X	X	X					X				~~Hold for~~
Dup-01	32 A-H	1/23	1430	W	8	X	X	X					X				~~Analysis~~
																	Provide chromatograms w/ TPH analyses and TPH prelims for possible EPH/ VPH follow-ups

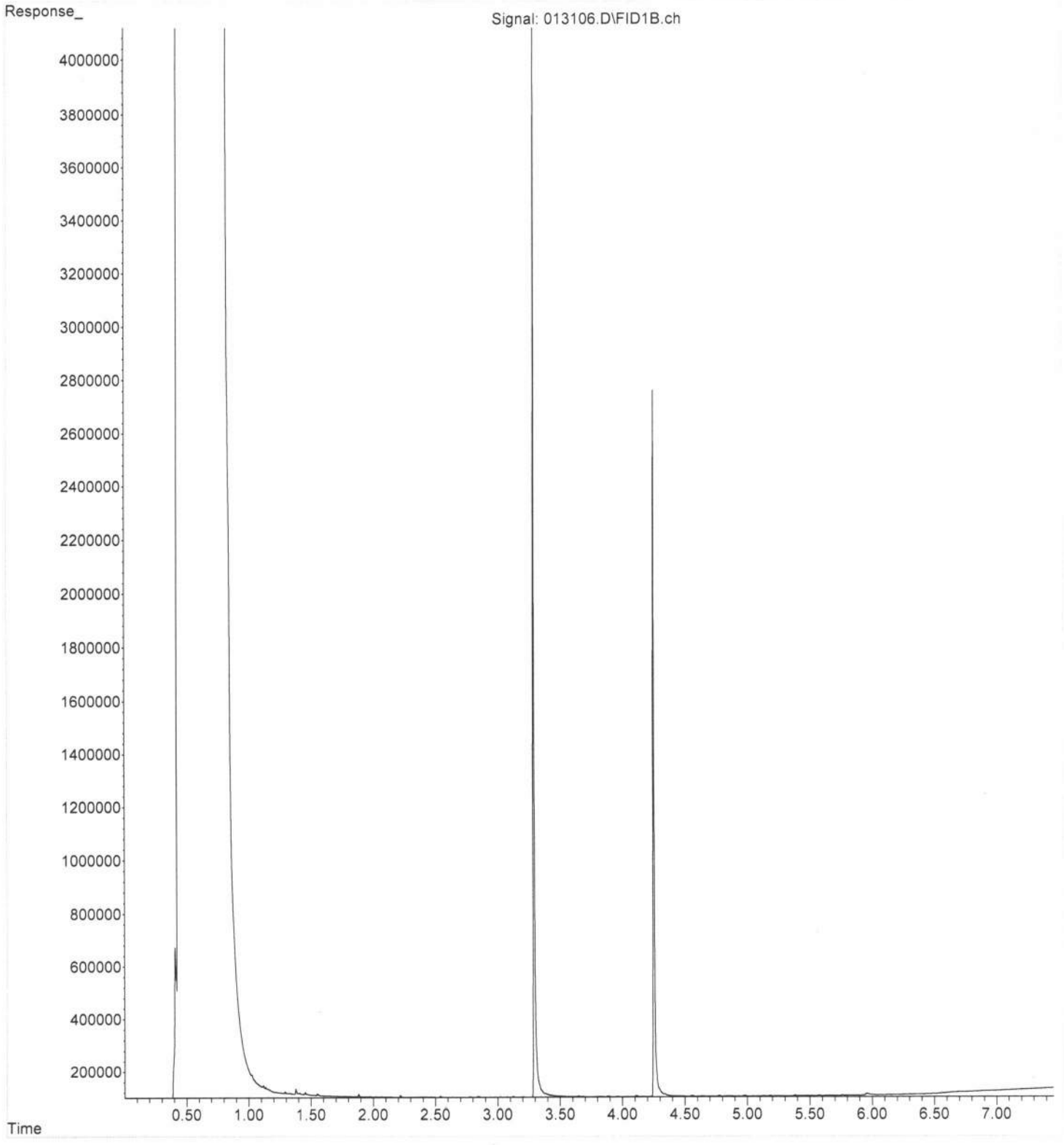
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Valcahan	HA	1/24/24	0820
Received by:	Eric Jones	F&B	1/29/24	0820
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
Ph. (206) 285-8282

File :P:\Proc_GC13\01-30-24\013011.D
Operator : TL
Acquired : 30 Jan 2024 10:57 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-01
Misc Info : ERR
Vial Number: 12

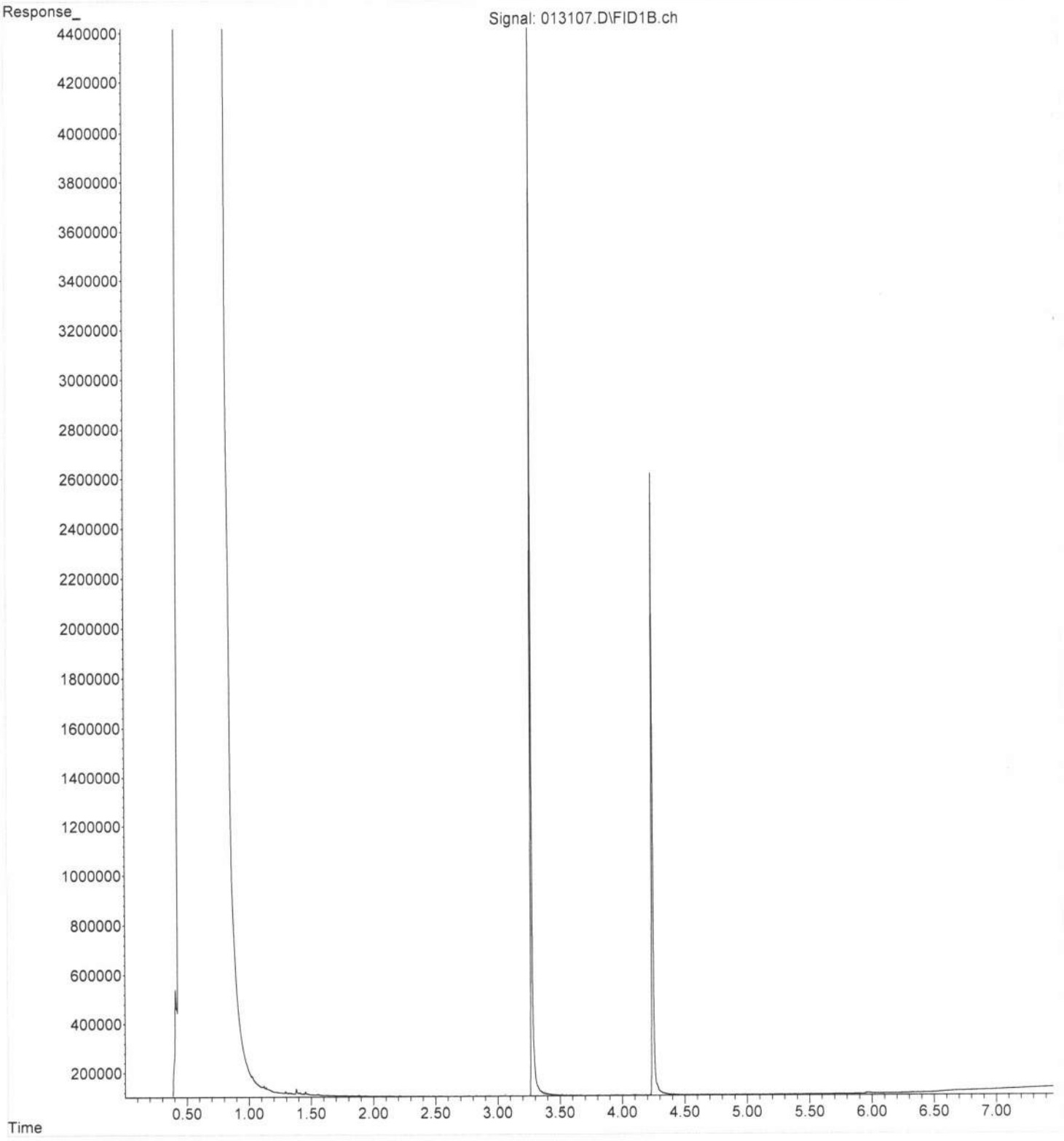


File :P:\Proc_GC13\01-31-24\013106.D
Operator : TL
Acquired : 31 Jan 2024 08:55 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-02
Misc Info : ERR
Vial Number: 6

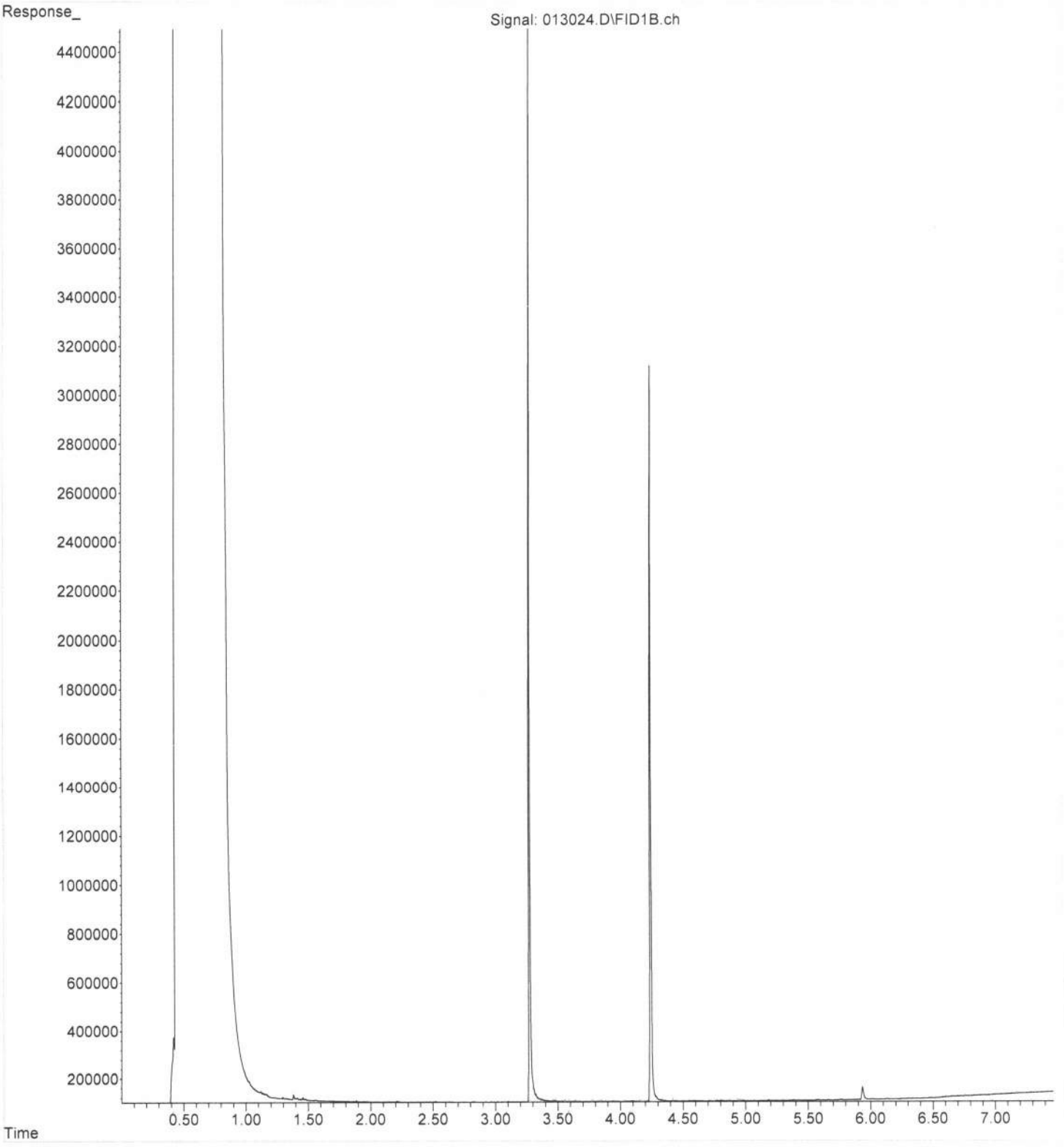


File :P:\Proc_GC13\01-31-24\013107.D
Operator : TL
Acquired : 31 Jan 2024 09:06 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-03
Misc Info :
Vial Number: 7

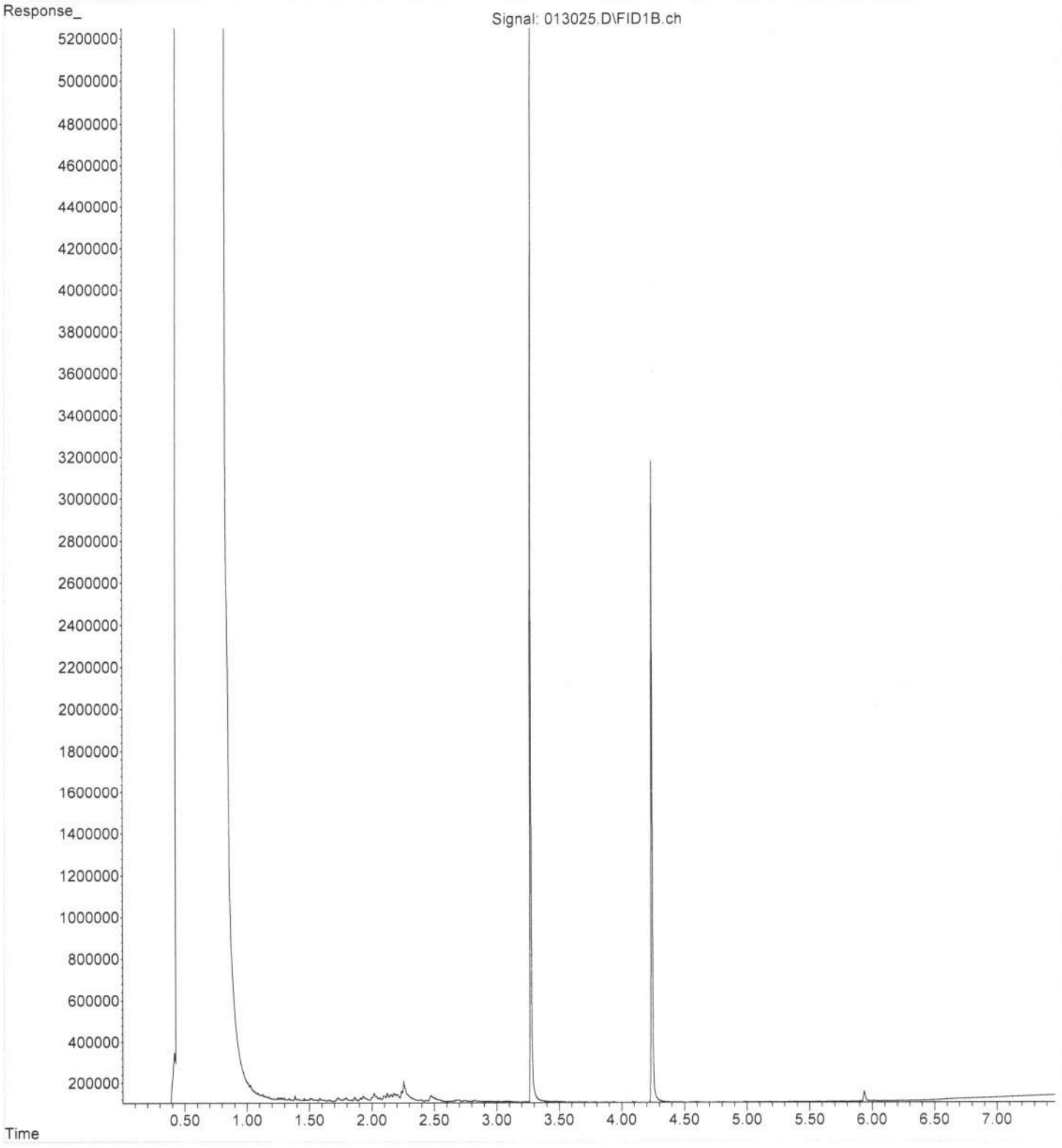
ERR



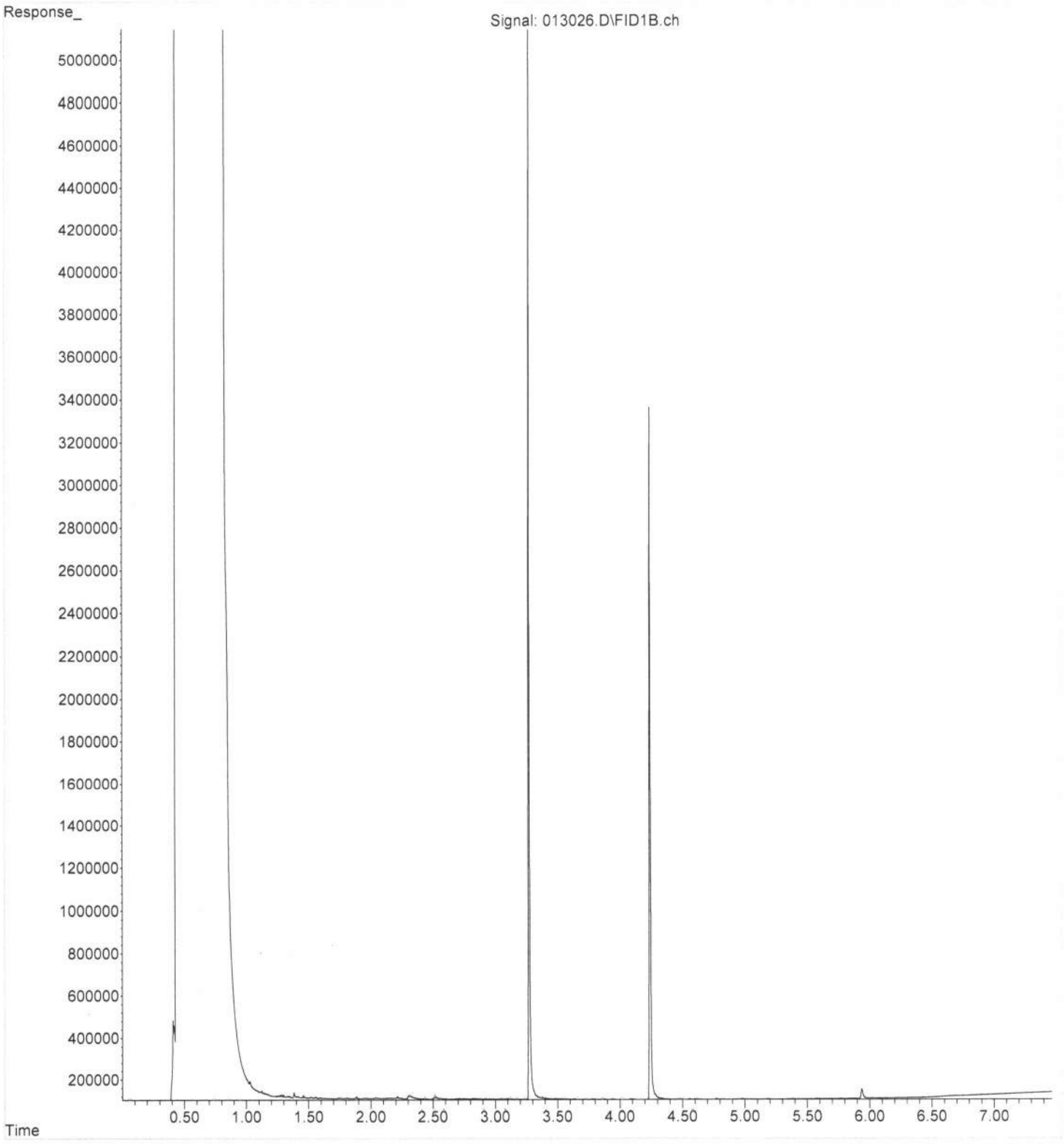
File :P:\Proc_GC13\01-30-24\013024.D
Operator : TL
Acquired : 30 Jan 2024 01:22 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-04
Misc Info : ERR
Vial Number: 15



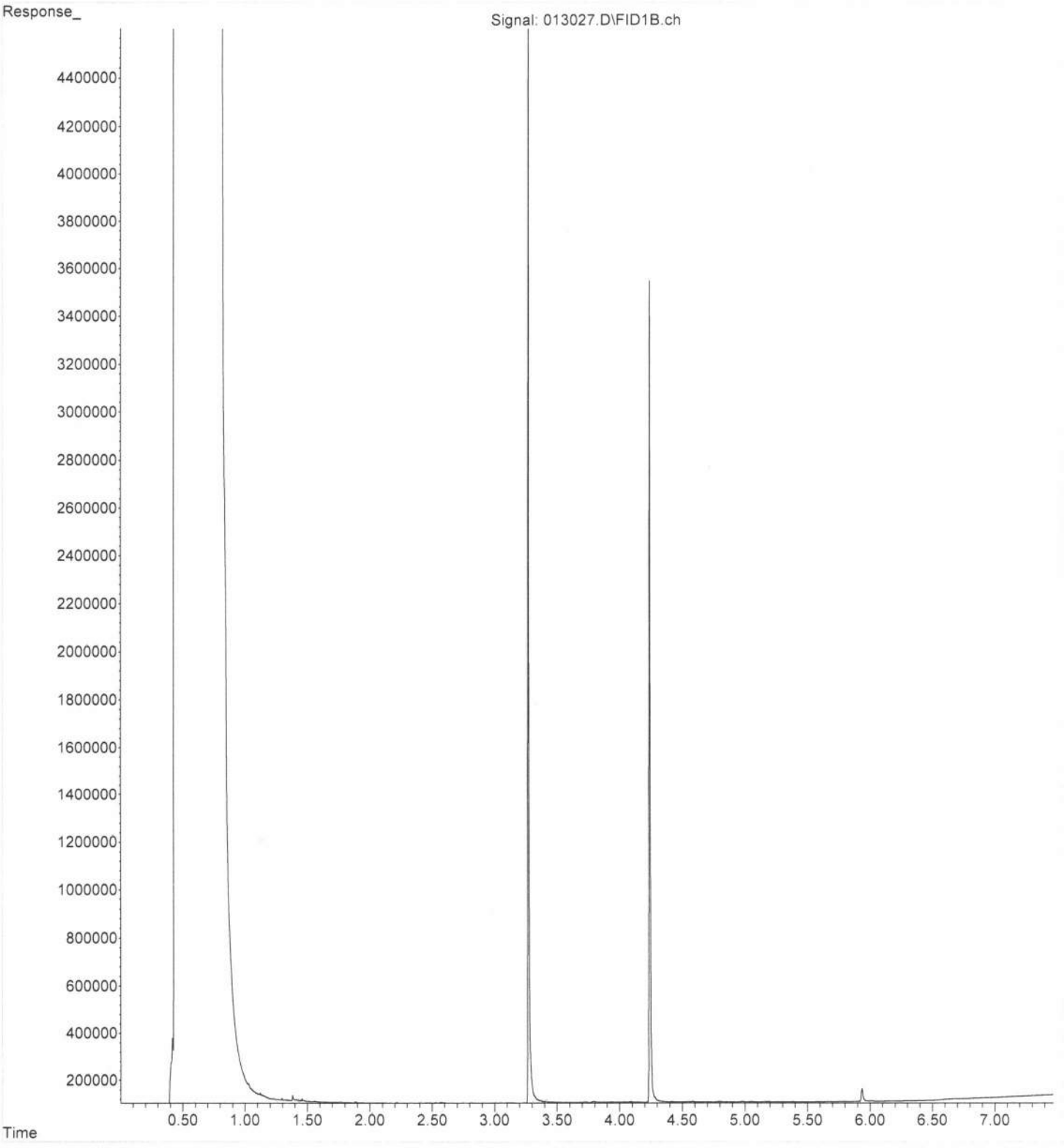
File :P:\Proc_GC13\01-30-24\013025.D
Operator : TL
Acquired : 30 Jan 2024 01:33 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-06
Misc Info : ERR
Vial Number: 16



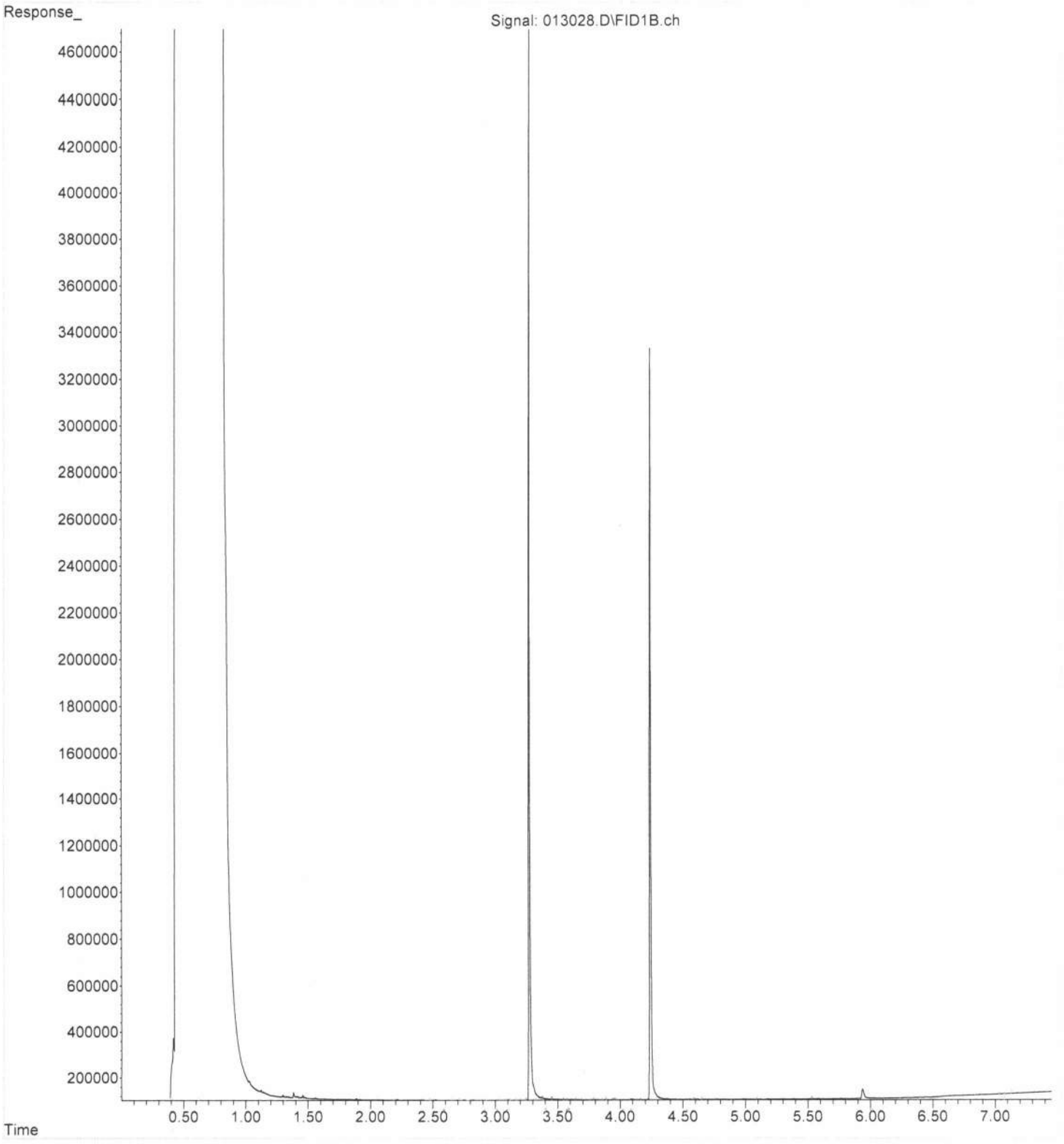
File :P:\Proc_GC13\01-30-24\013026.D
Operator : TL
Acquired : 30 Jan 2024 01:45 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-07
Misc Info : ERR
Vial Number: 17



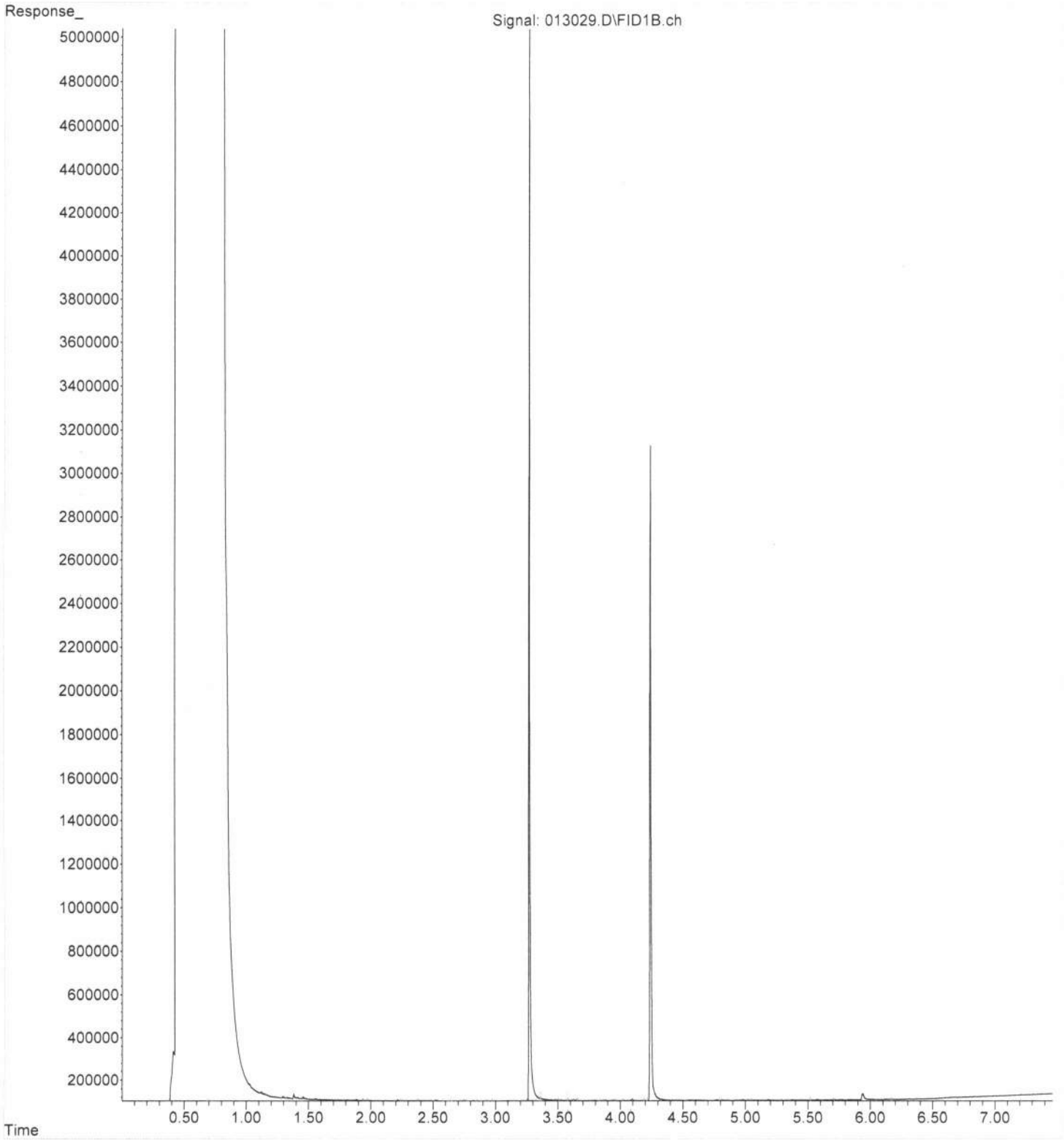
File :P:\Proc_GC13\01-30-24\013027.D
Operator : TL
Acquired : 30 Jan 2024 01:56 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-08
Misc Info : ERR
Vial Number: 18



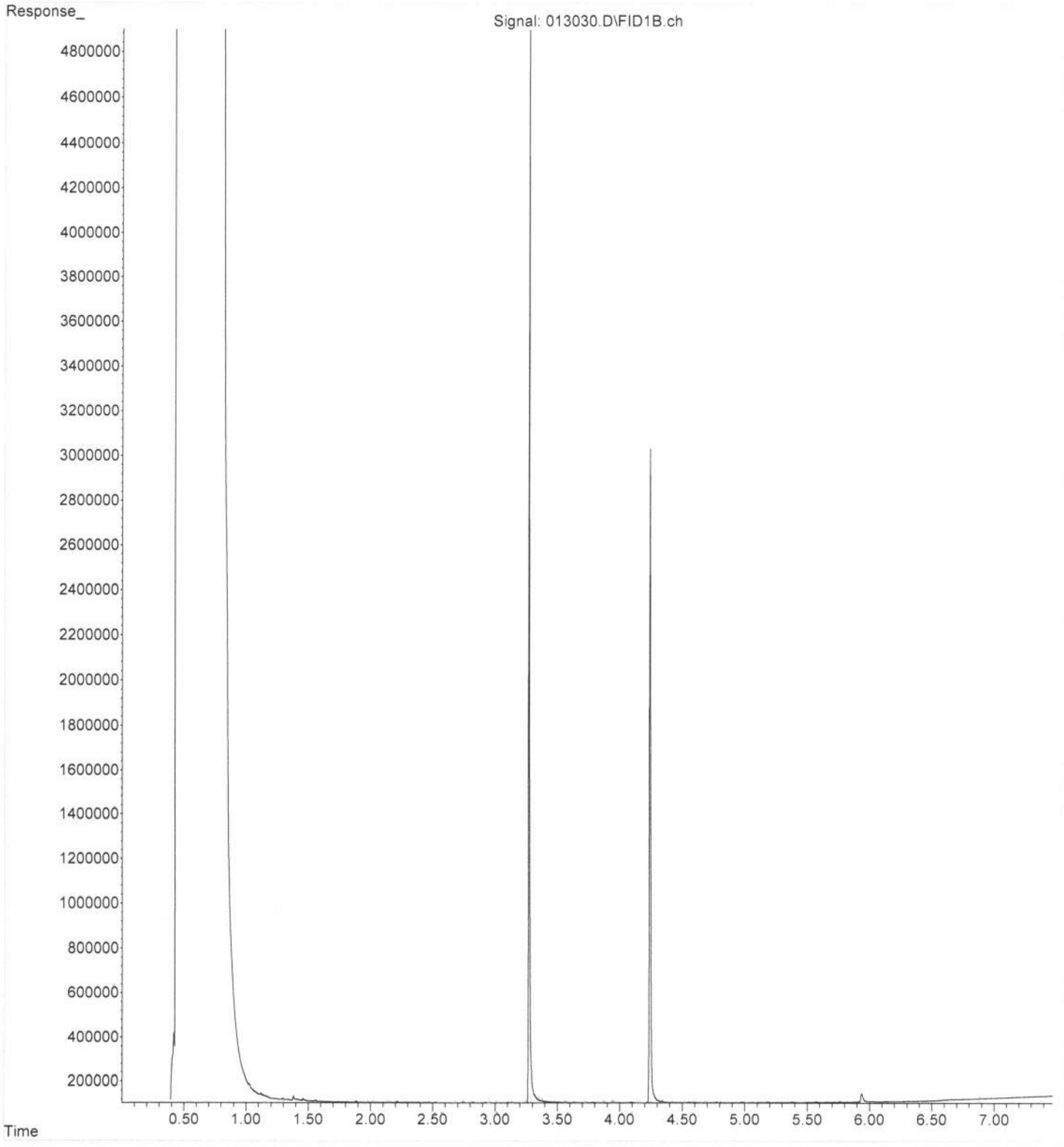
File :P:\Proc_GC13\01-30-24\013028.D
Operator : TL
Acquired : 30 Jan 2024 02:07 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-09
Misc Info : ERR
Vial Number: 19



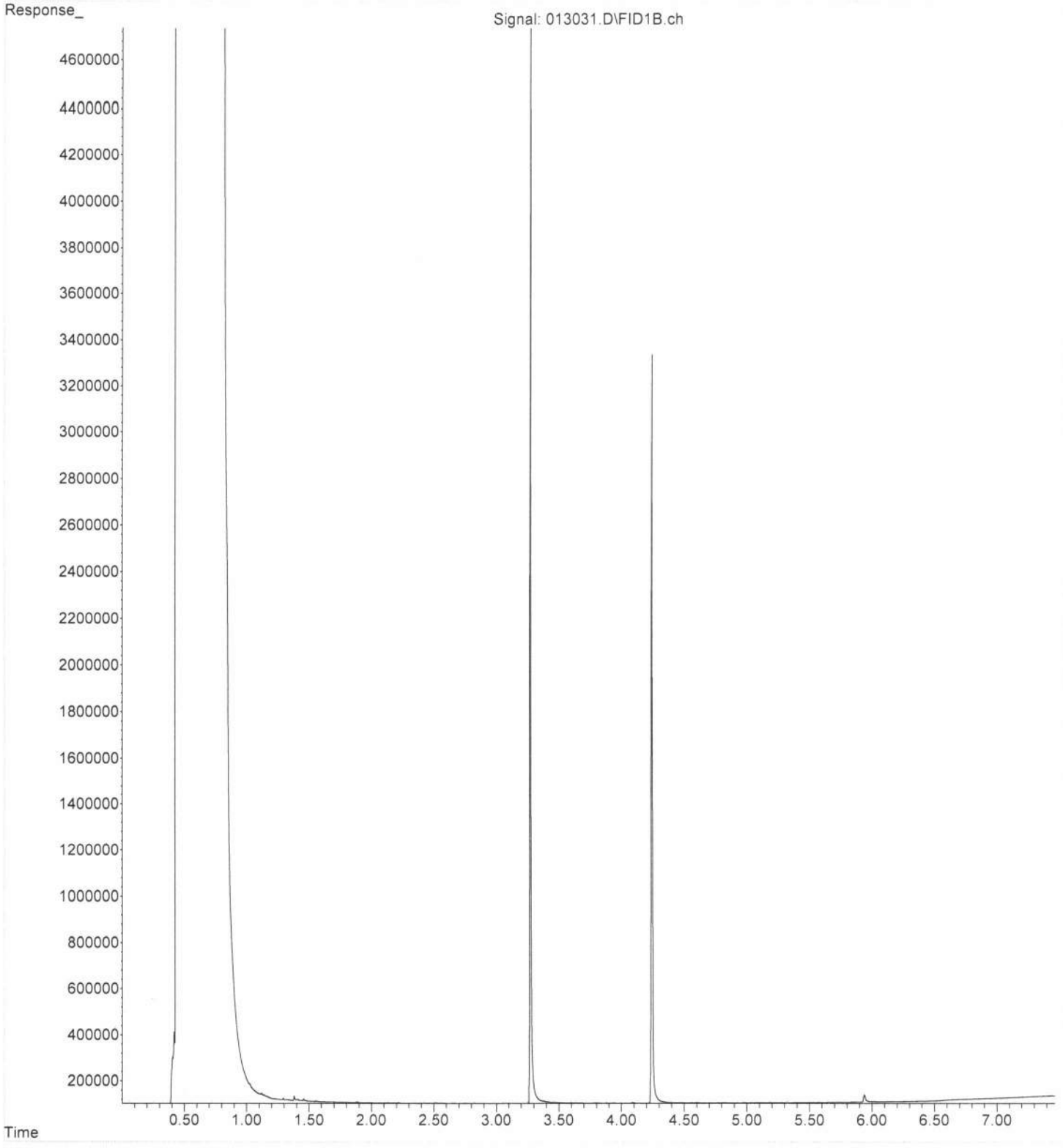
File :P:\Proc_GC13\01-30-24\013029.D
Operator : TL
Acquired : 30 Jan 2024 02:18 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-10
Misc Info : ERR
Vial Number: 20



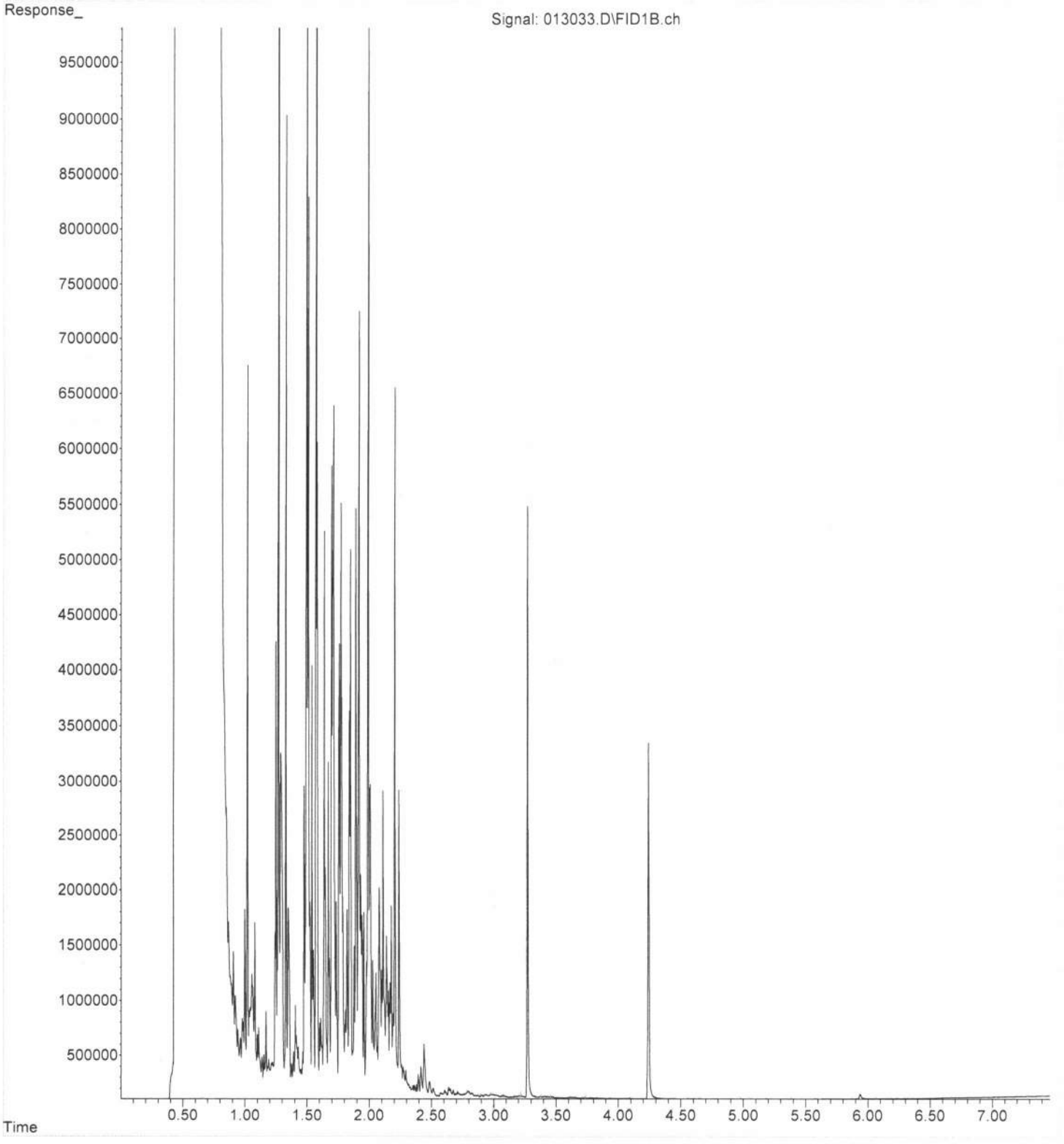
File :P:\Proc_GC13\01-30-24\013030.D
Operator : TL
Acquired : 30 Jan 2024 02:29 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-11
Misc Info : ERR
Vial Number: 21



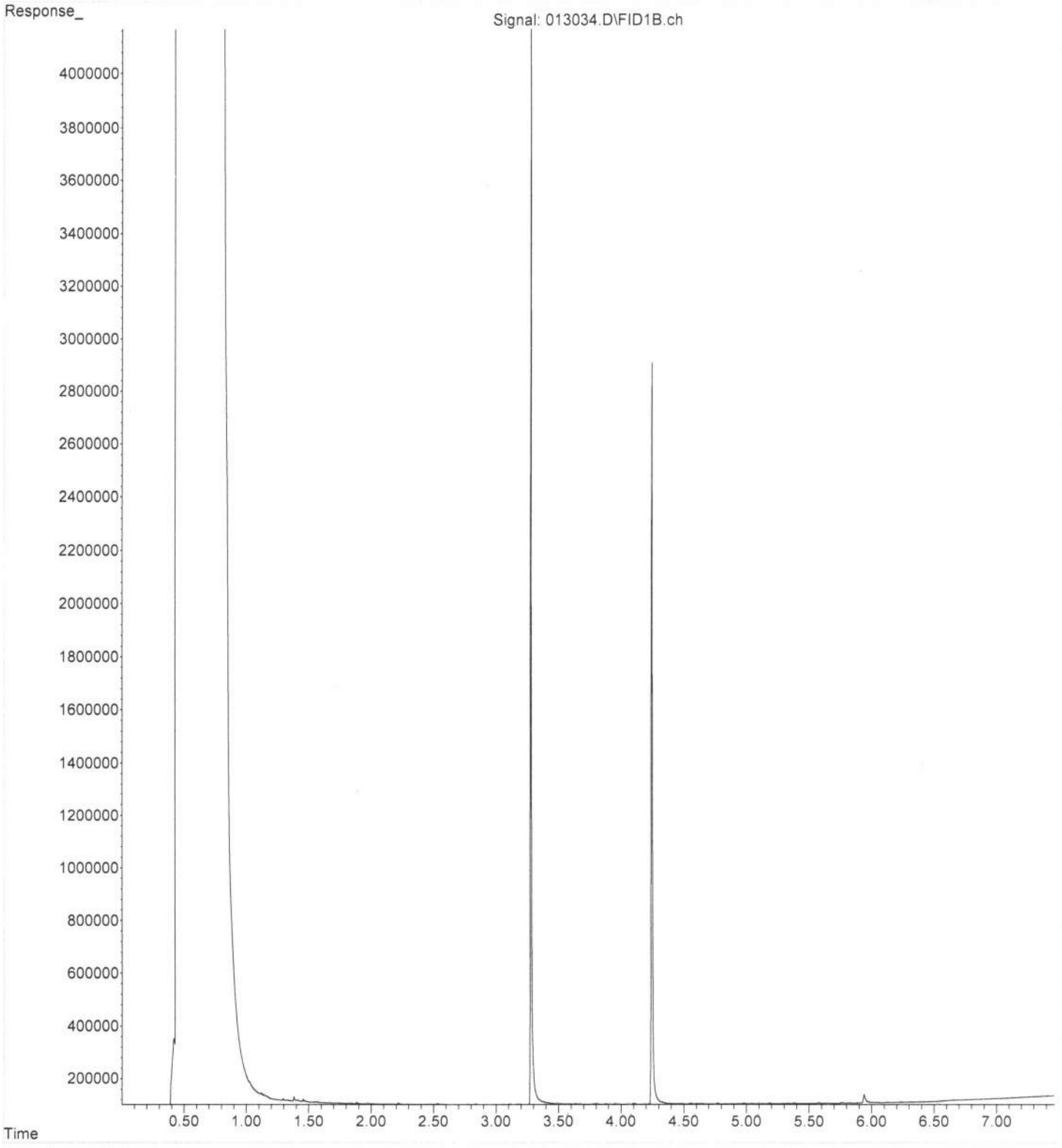
File :P:\Proc_GC13\01-30-24\013031.D
Operator : TL
Acquired : 30 Jan 2024 02:41 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-12
Misc Info : ERR
Vial Number: 22



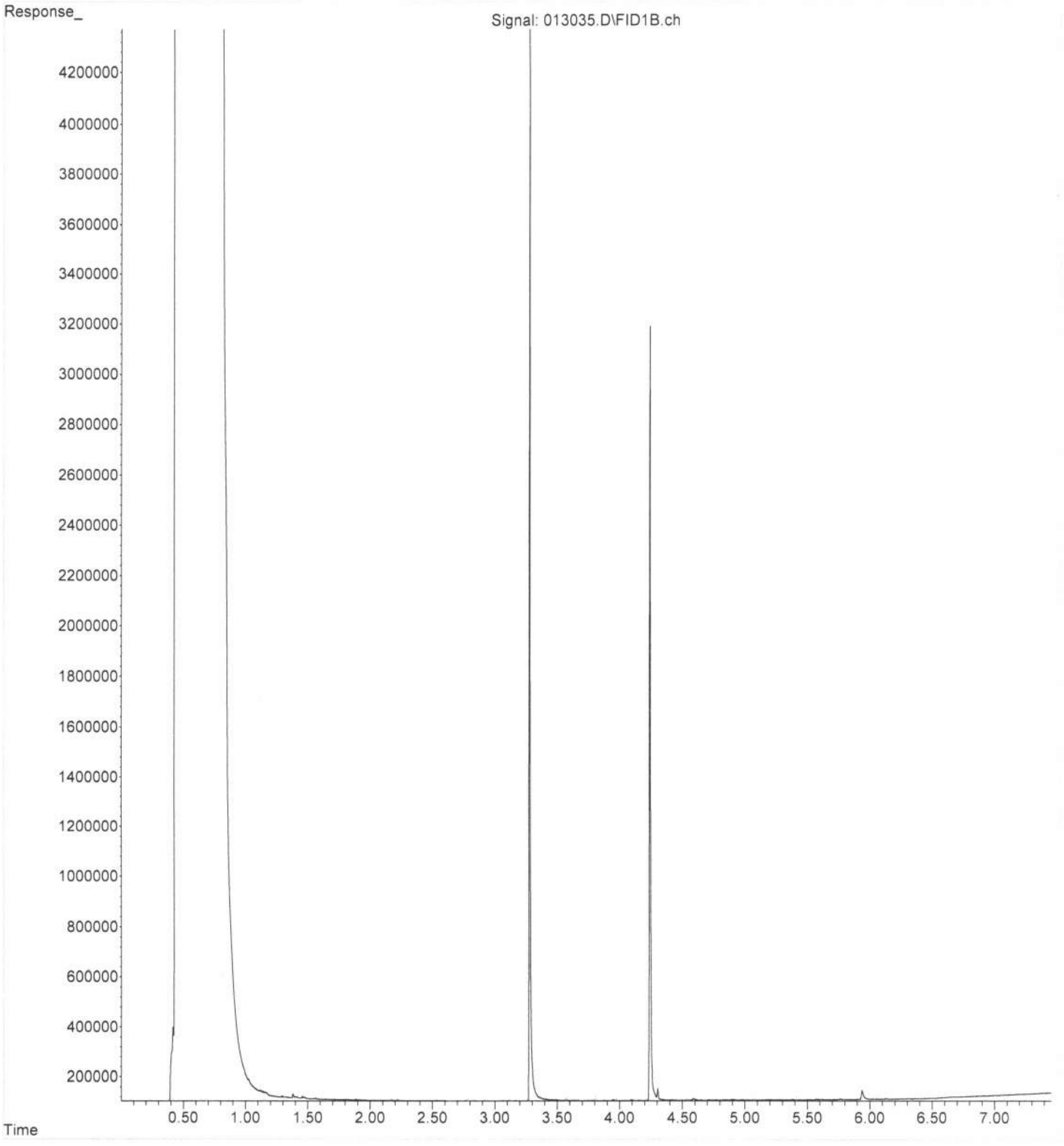
File :P:\Proc_GC13\01-30-24\013033.D
Operator : TL
Acquired : 30 Jan 2024 03:03 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-14
Misc Info : ERR
Vial Number: 23



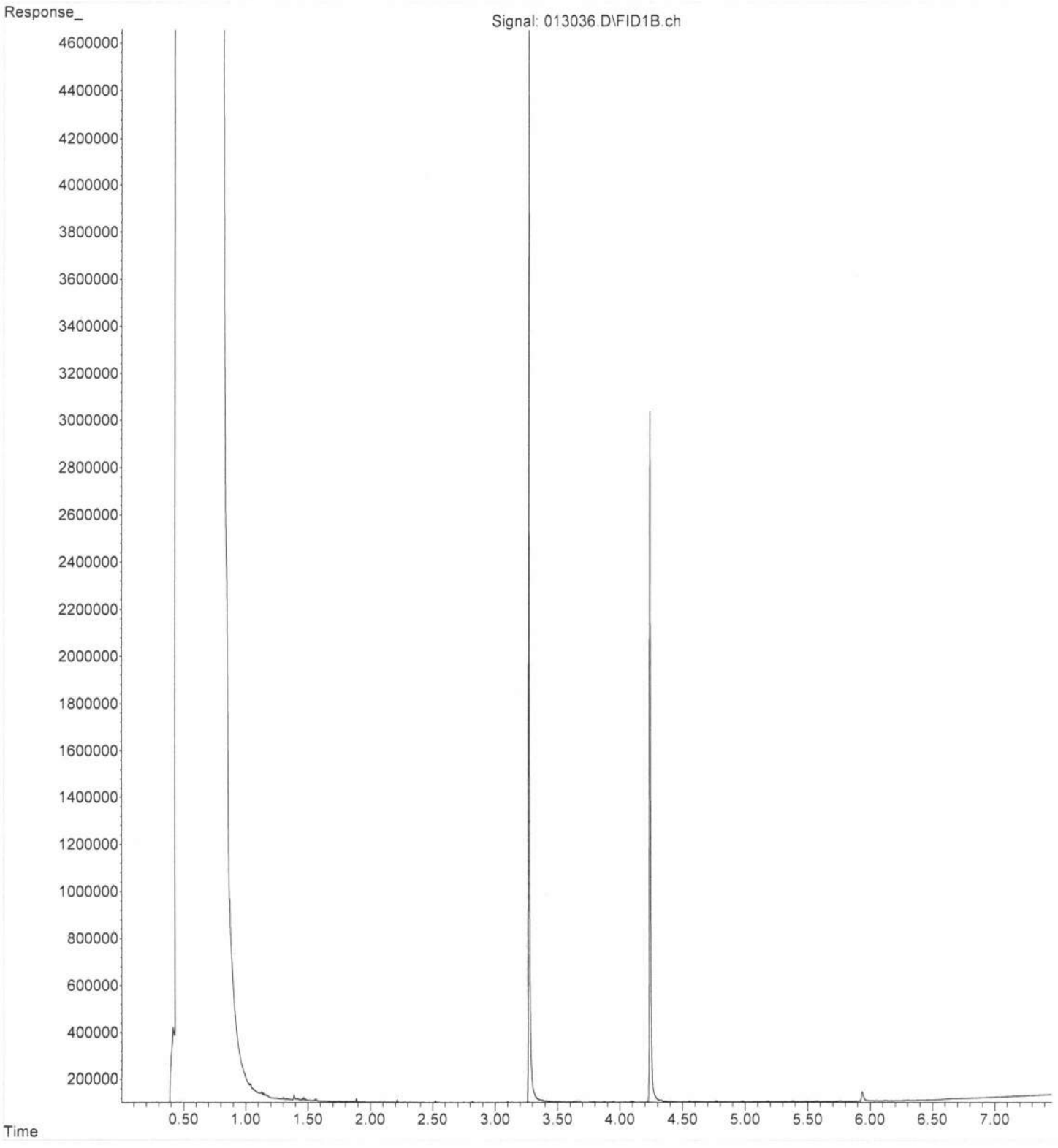
File :P:\Proc_GC13\01-30-24\013034.D
Operator : TL
Acquired : 30 Jan 2024 03:14 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-16
Misc Info : ERR
Vial Number: 24



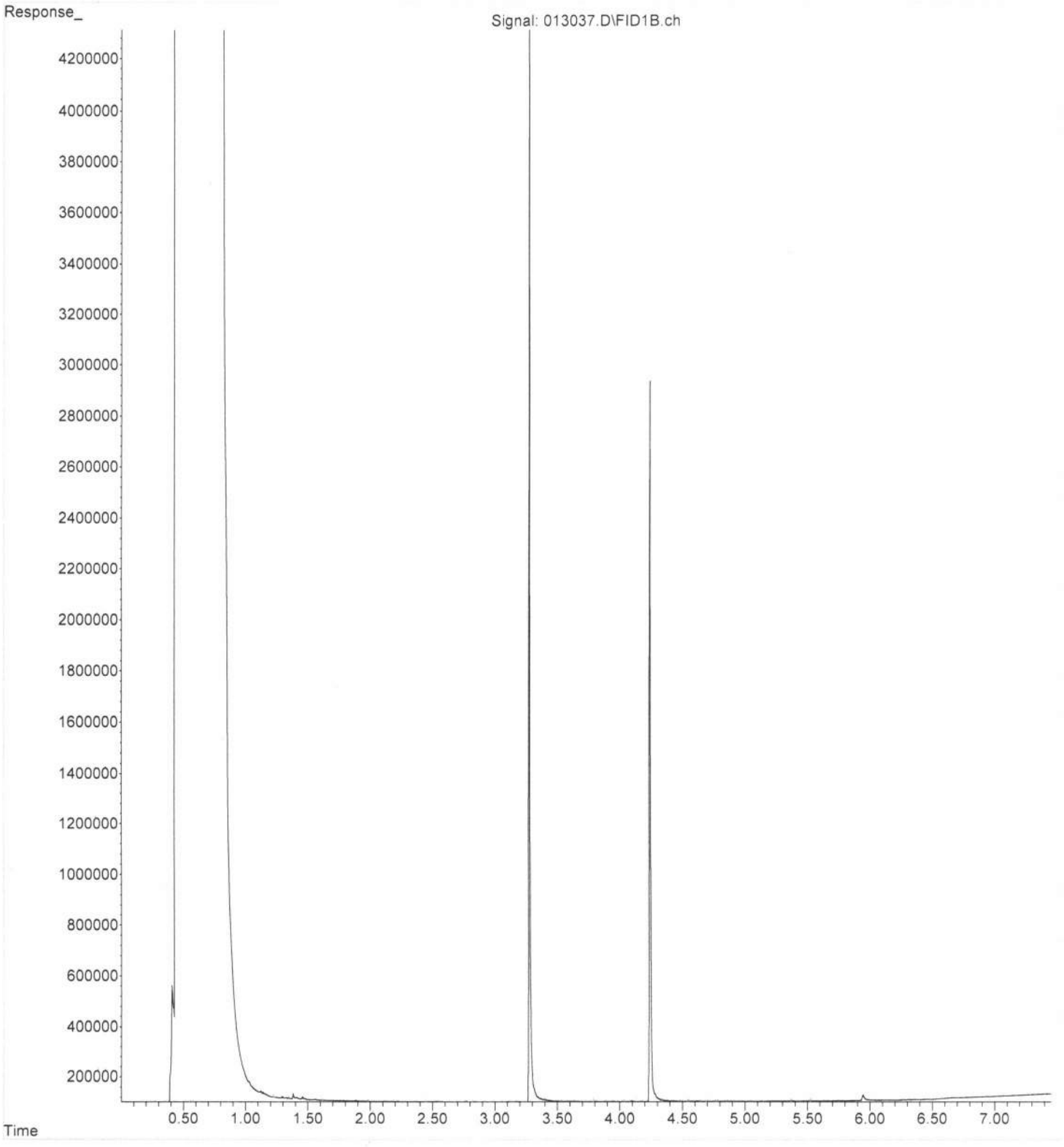
File :P:\Proc_GC13\01-30-24\013035.D
Operator : TL
Acquired : 30 Jan 2024 03:25 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-17
Misc Info : ERR
Vial Number: 25



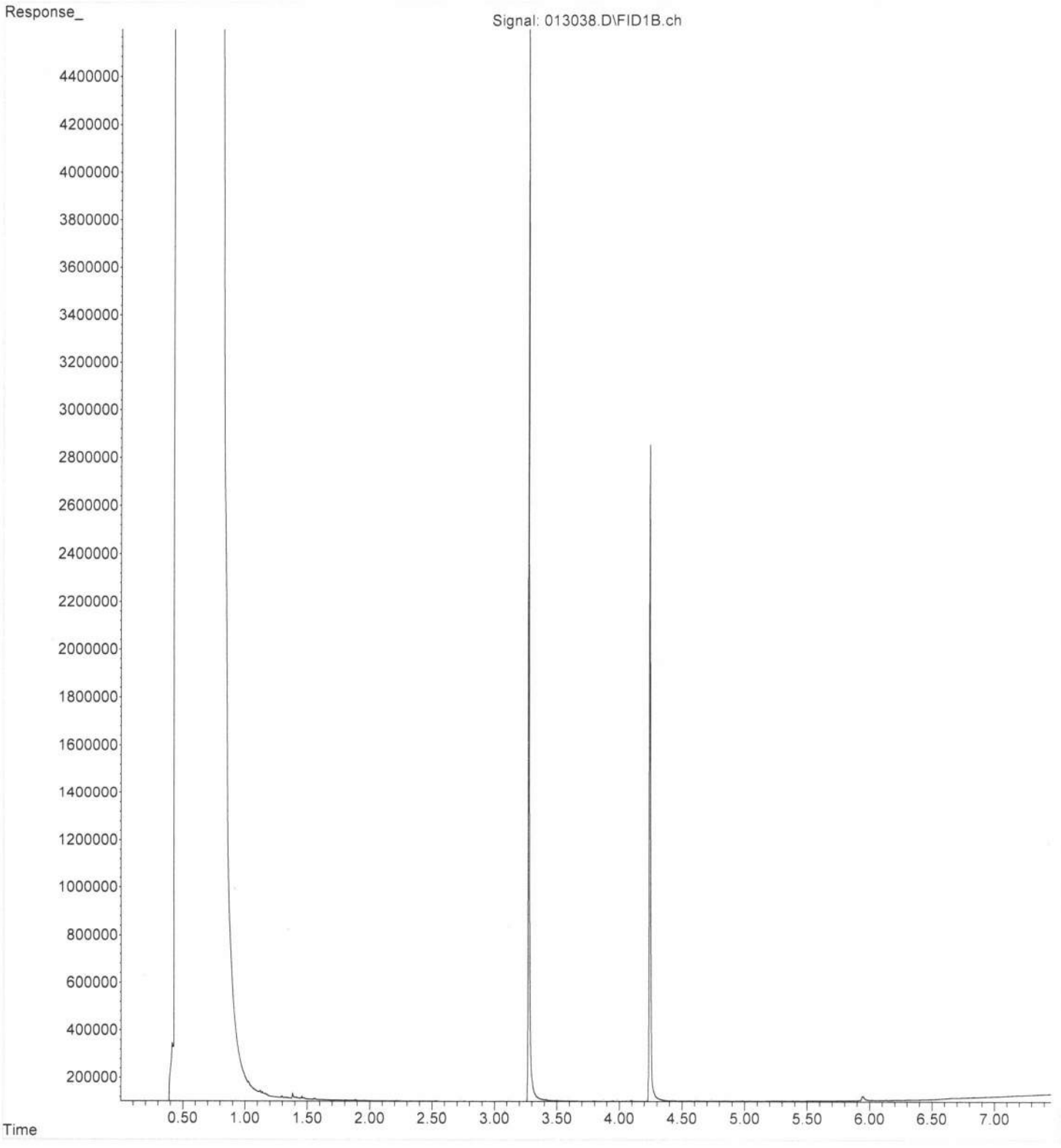
File :P:\Proc_GC13\01-30-24\013036.D
Operator : TL
Acquired : 30 Jan 2024 03:35 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-18
Misc Info : ERR
Vial Number: 26



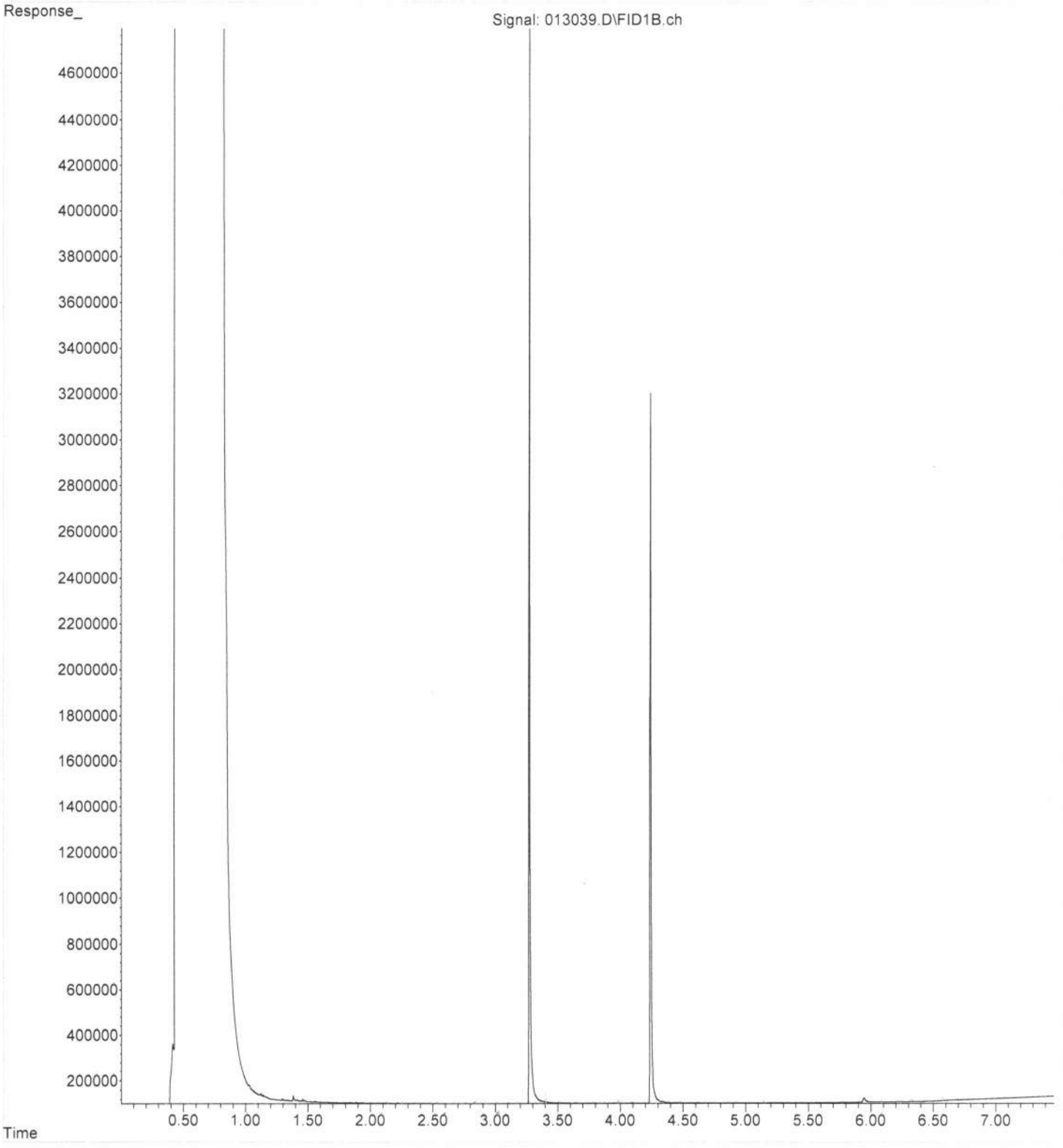
File :P:\Proc_GC13\01-30-24\013037.D
Operator : TL
Acquired : 30 Jan 2024 03:47 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-19
Misc Info : ERR
Vial Number: 27



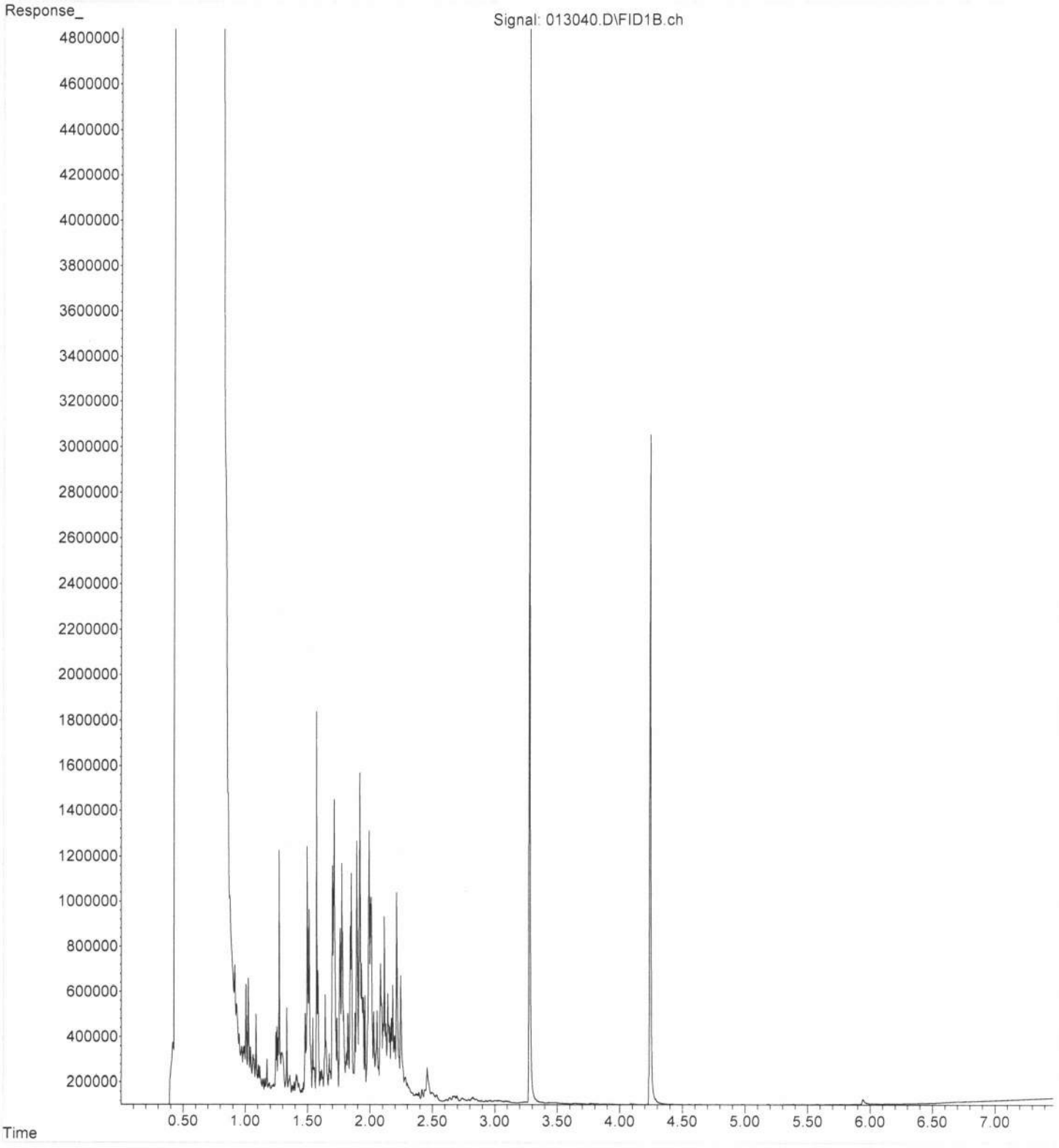
File :P:\Proc_GC13\01-30-24\013038.D
Operator : TL
Acquired : 30 Jan 2024 03:58 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-20
Misc Info : ERR
Vial Number: 28



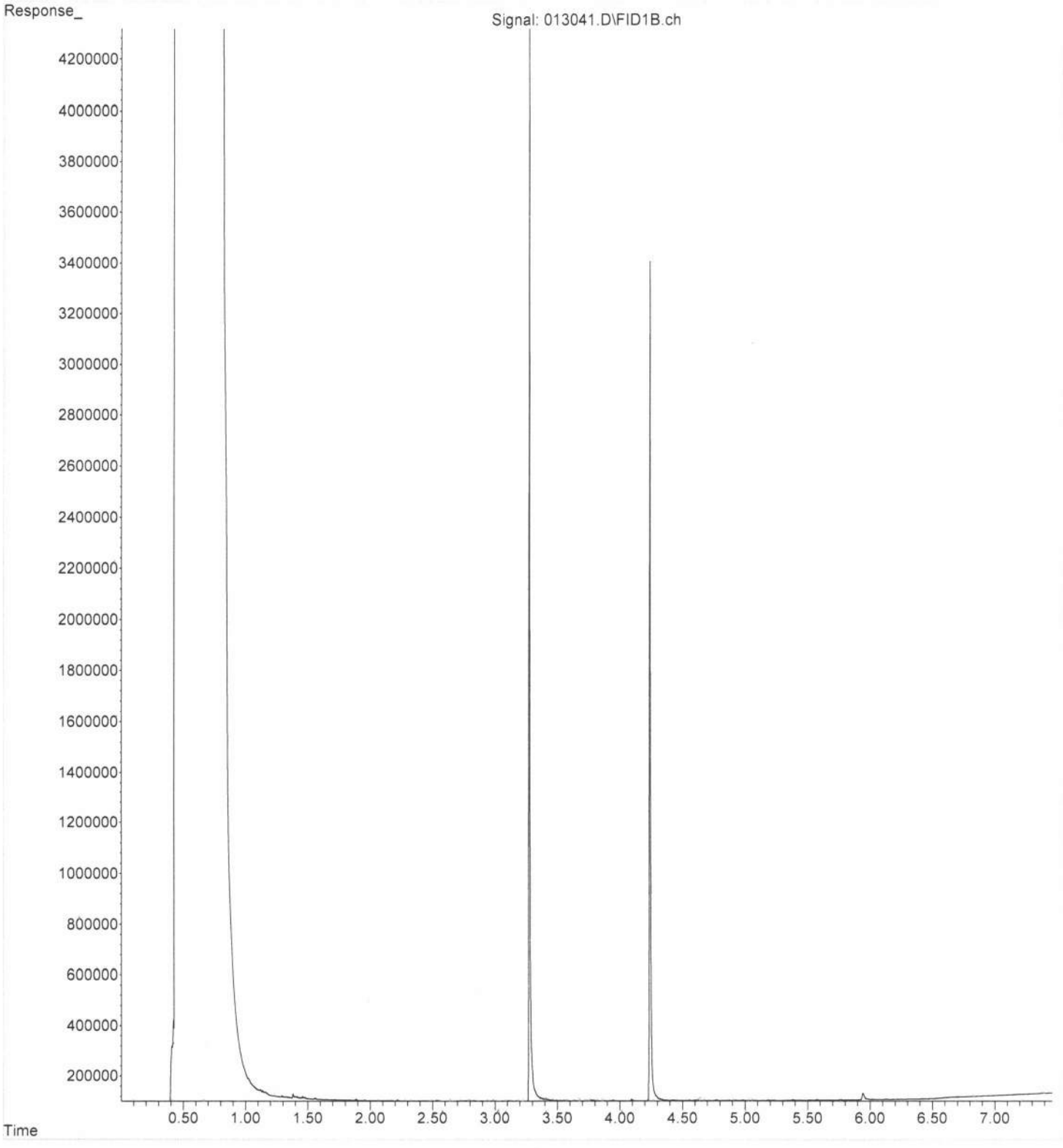
File :P:\Proc_GC13\01-30-24\013039.D
Operator : TL
Acquired : 30 Jan 2024 04:09 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-21
Misc Info : ERR
Vial Number: 29



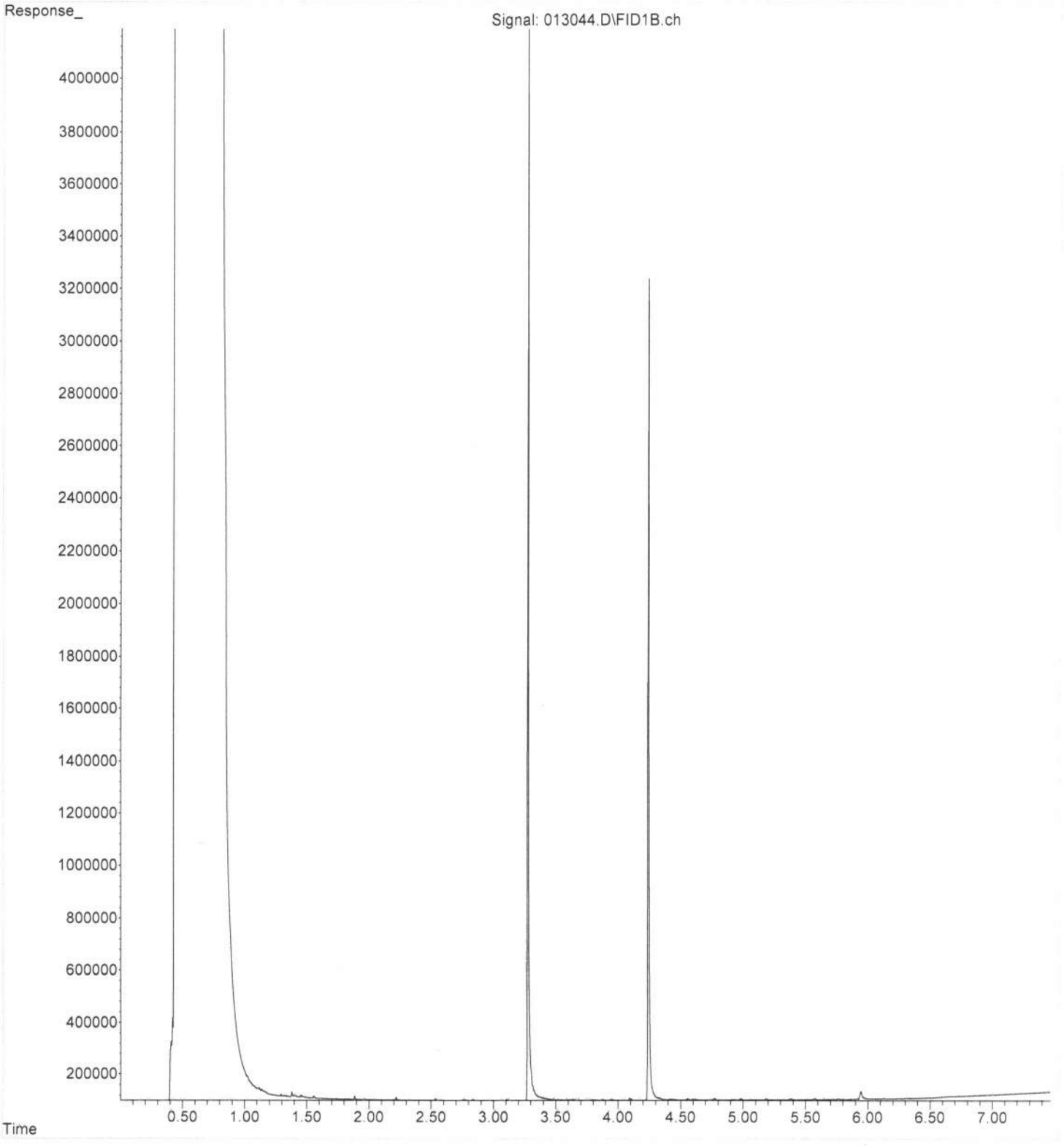
File :P:\Proc_GC13\01-30-24\013040.D
Operator : TL
Acquired : 30 Jan 2024 04:20 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-23
Misc Info : ERR
Vial Number: 30



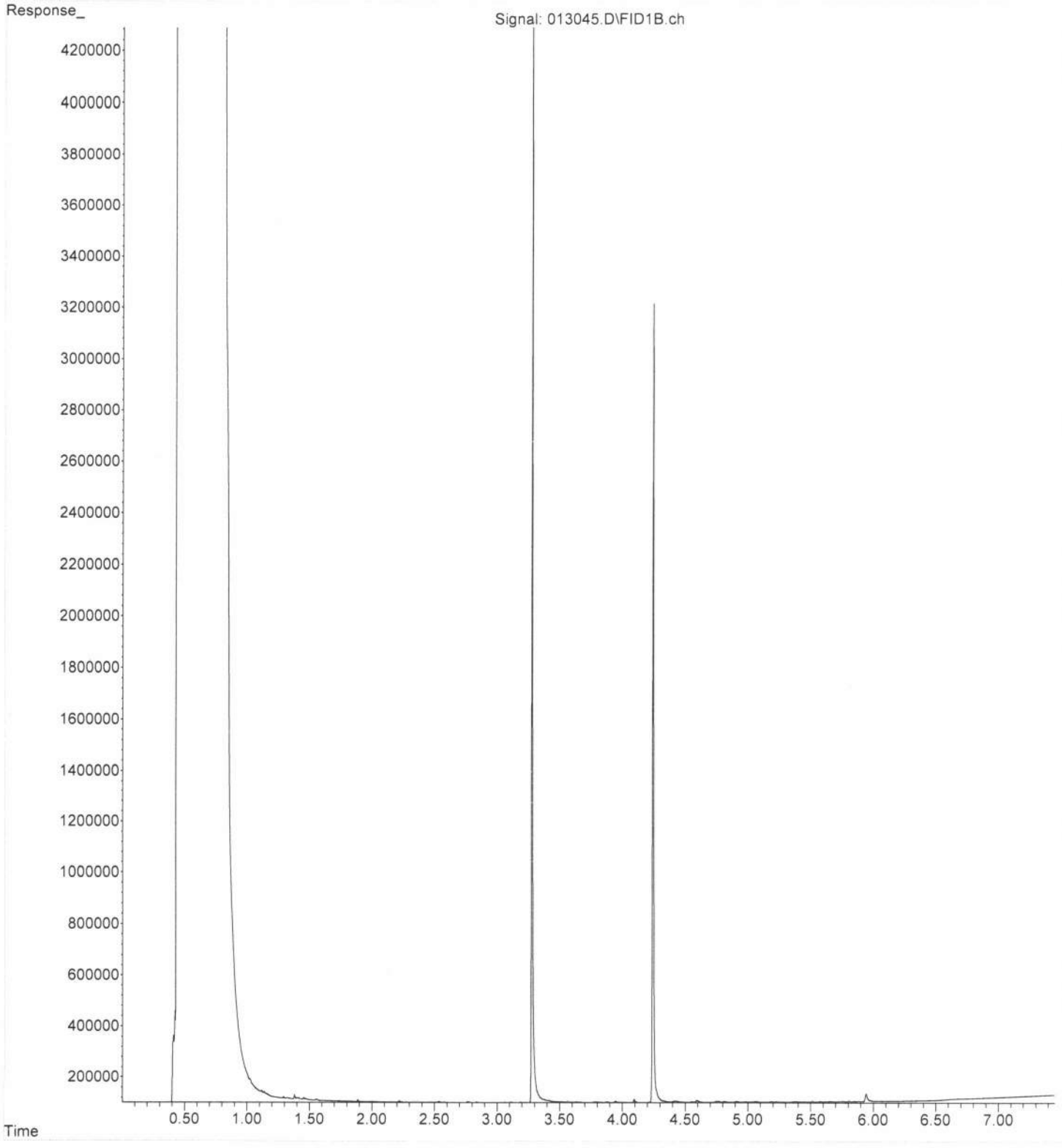
File :P:\Proc_GC13\01-30-24\013041.D
Operator : TL
Acquired : 30 Jan 2024 04:32 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-24
Misc Info : ERR
Vial Number: 31



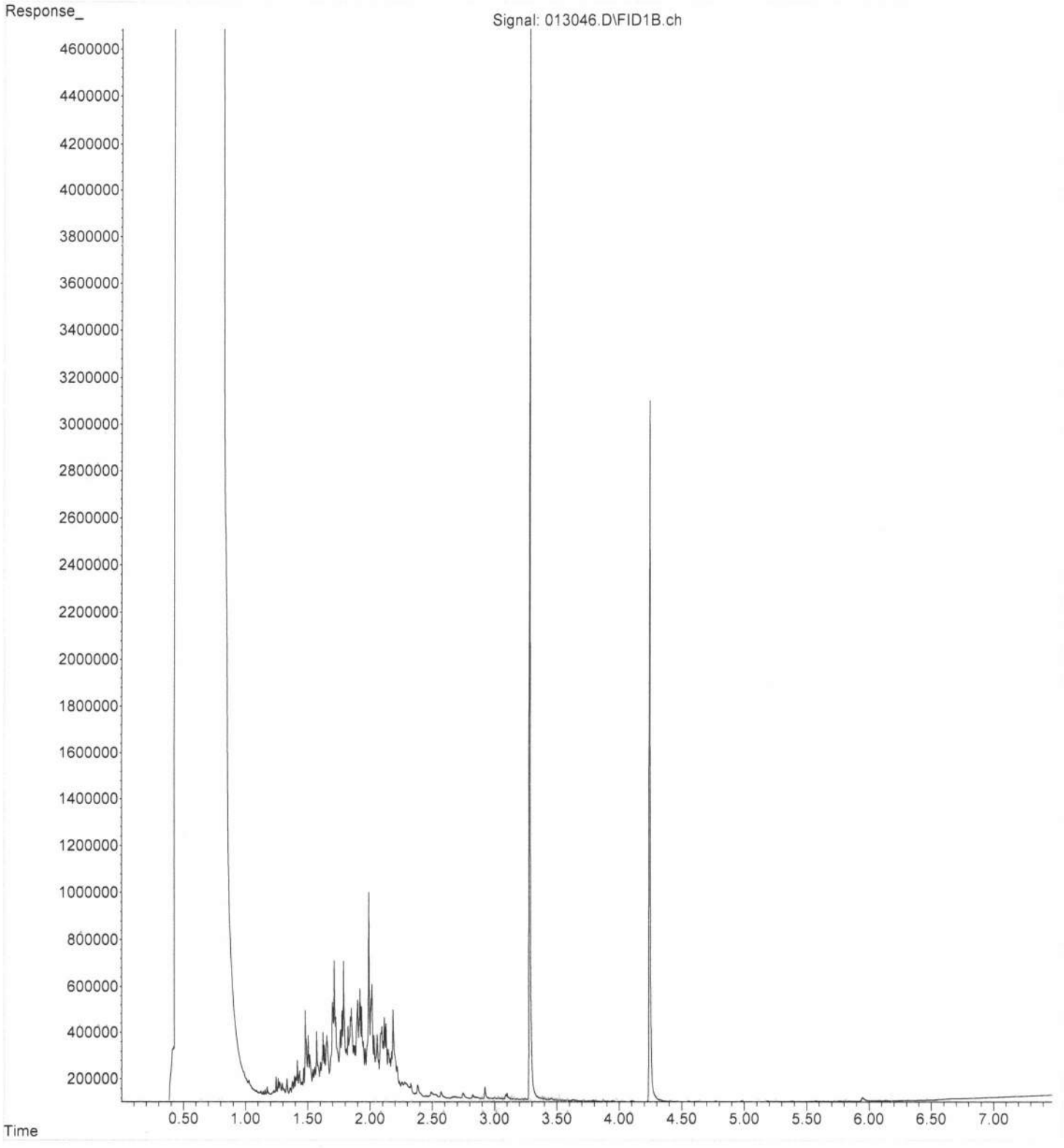
File :P:\Proc_GC13\01-30-24\013044.D
Operator : TL
Acquired : 30 Jan 2024 05:05 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-25
Misc Info : ERR
Vial Number: 33



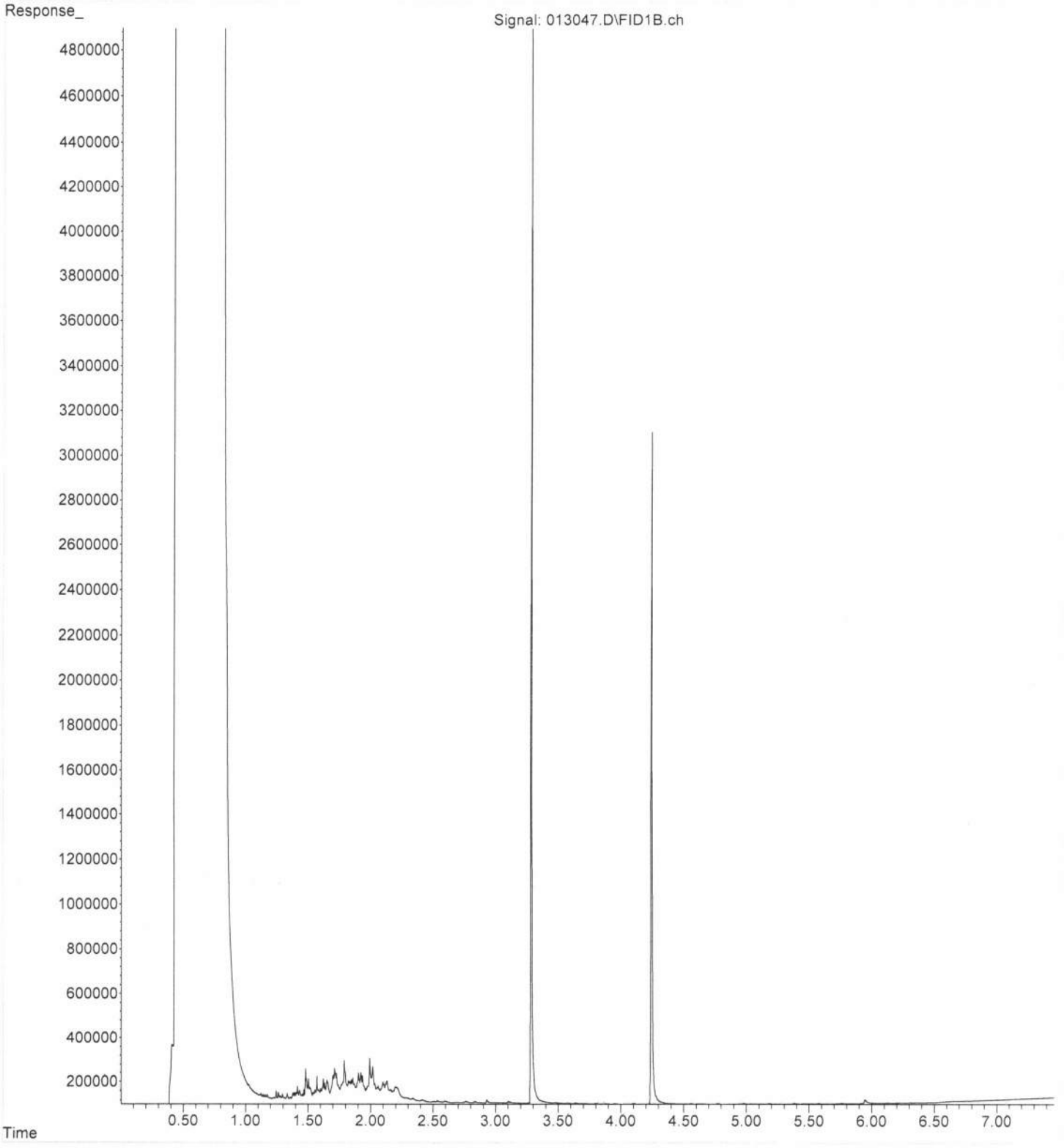
File :P:\Proc_GC13\01-30-24\013045.D
Operator : TL
Acquired : 30 Jan 2024 05:16 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-26
Misc Info : ERR
Vial Number: 34



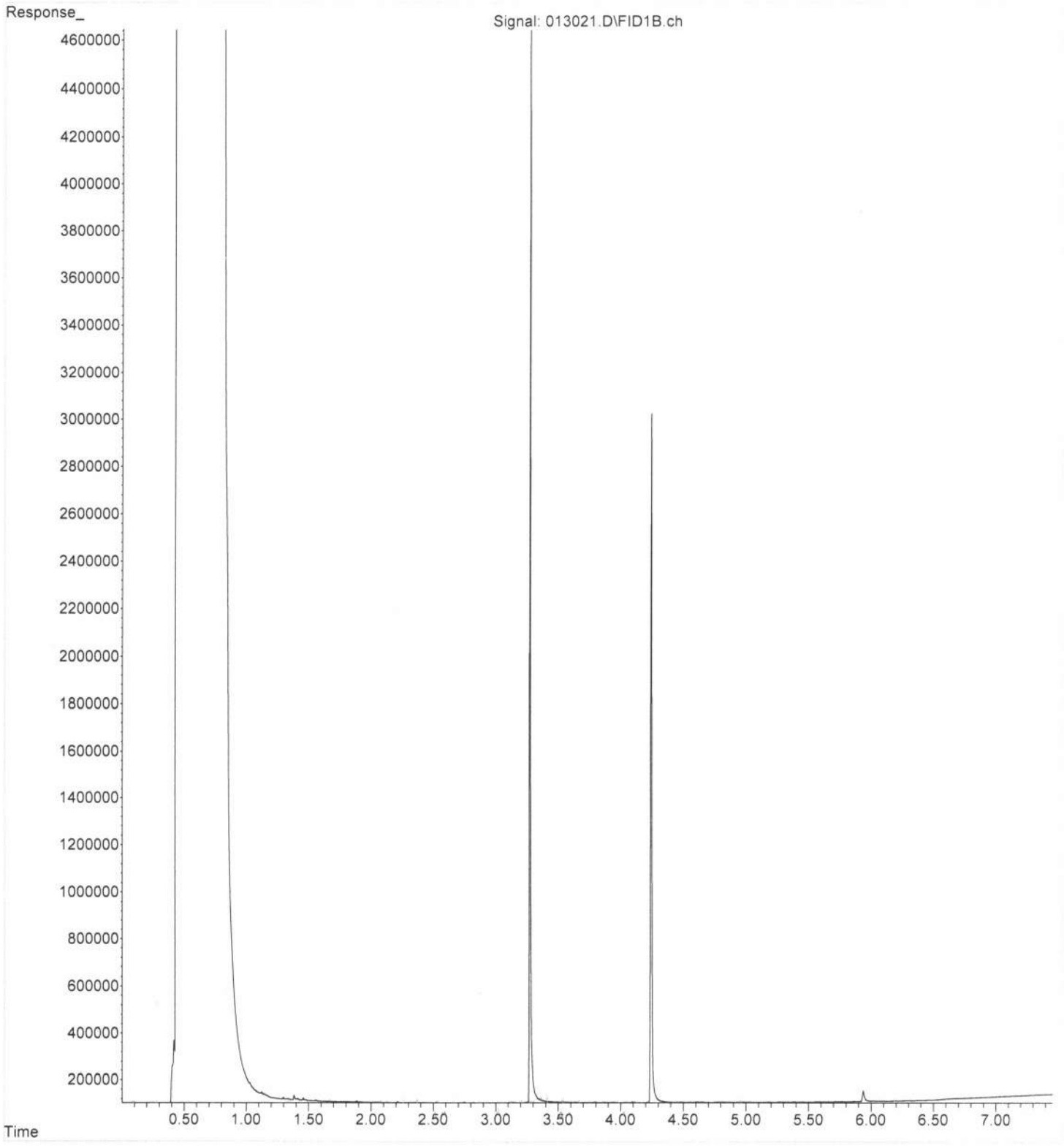
File :P:\Proc_GC13\01-30-24\013046.D
Operator : TL
Acquired : 30 Jan 2024 05:27 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-27
Misc Info : ERR
Vial Number: 35



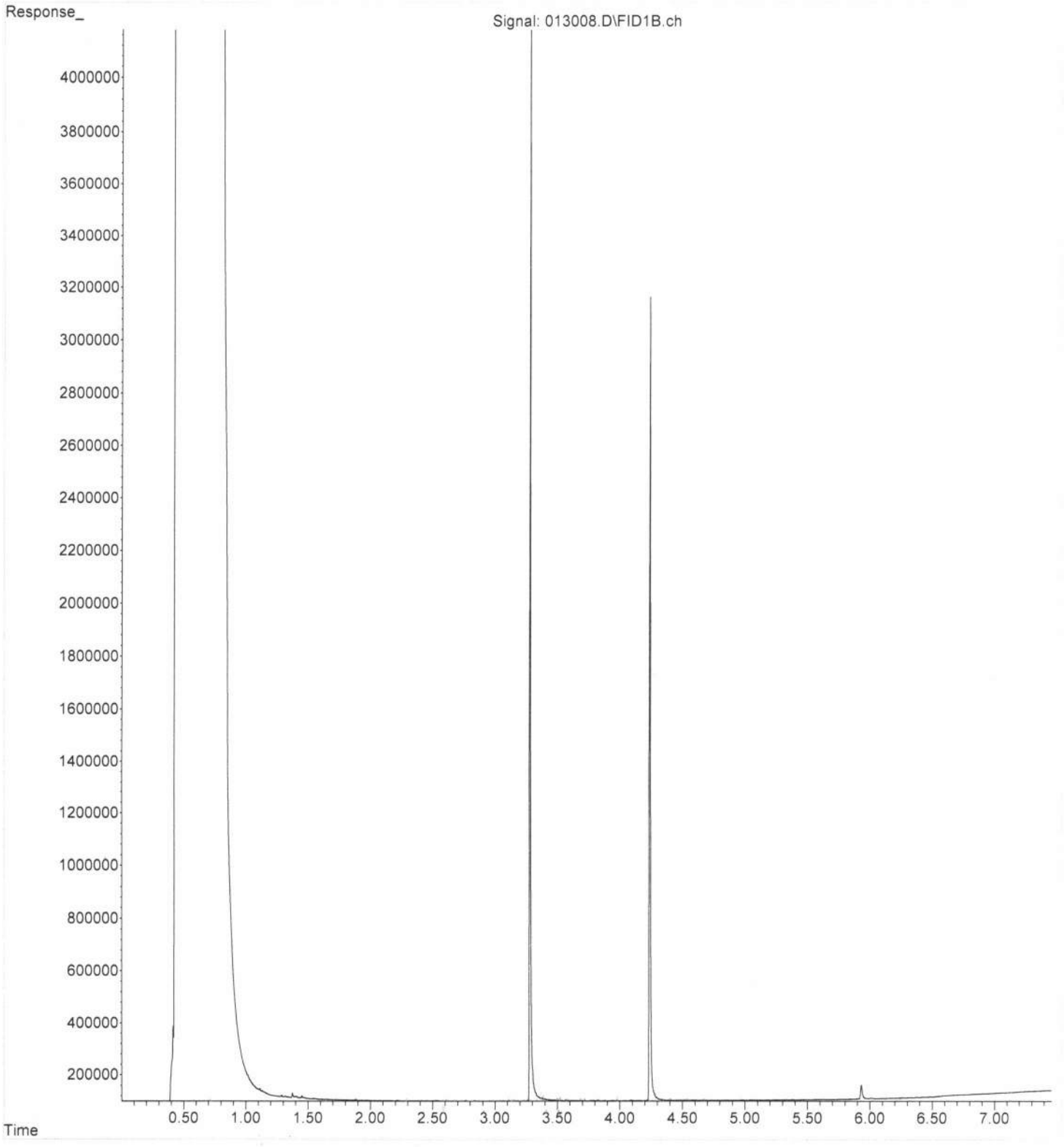
File :P:\Proc_GC13\01-30-24\013047.D
Operator : TL
Acquired : 30 Jan 2024 05:39 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 401358-28
Misc Info : ERR
Vial Number: 36



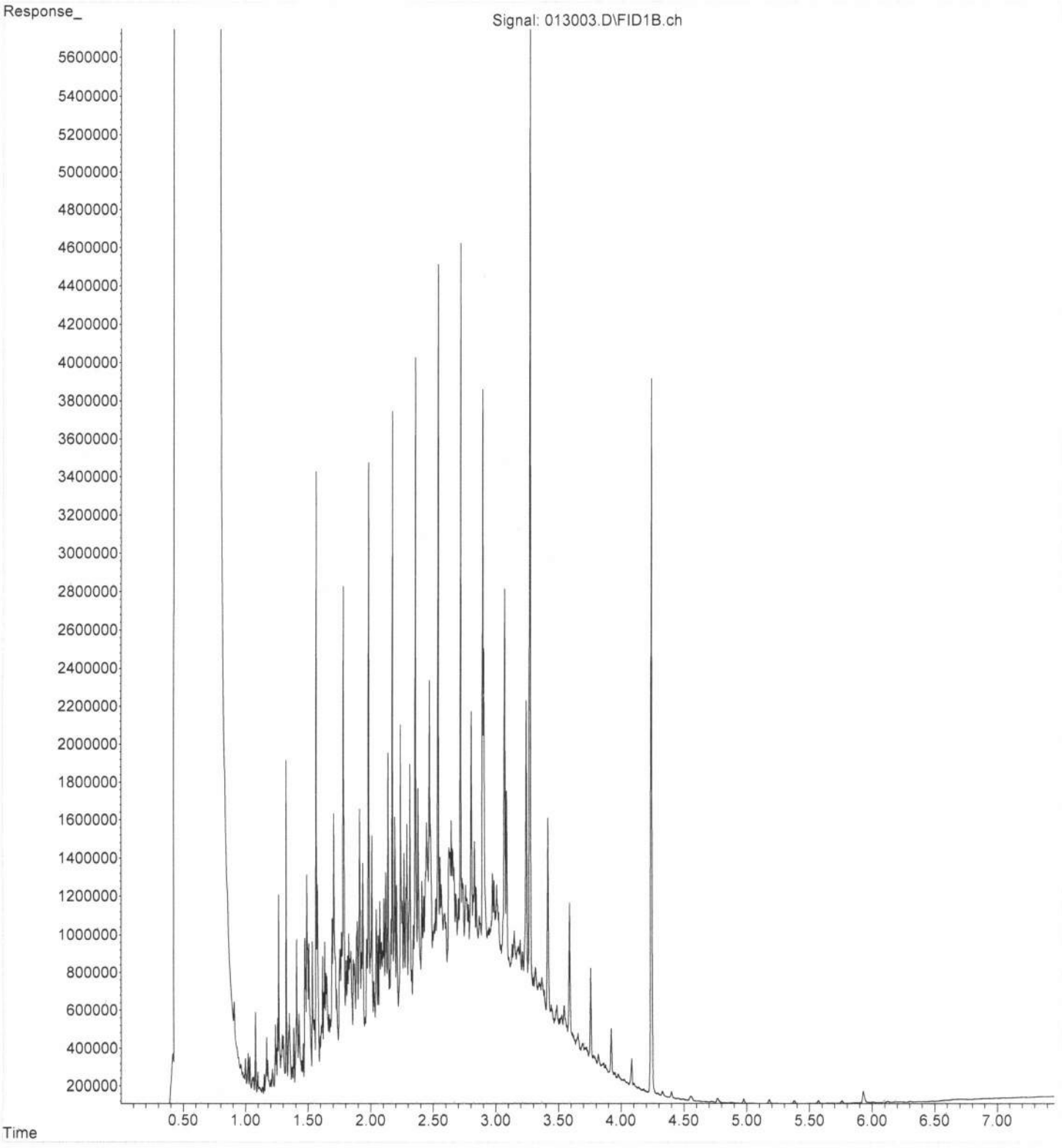
File : P:\Proc_GC13\01-30-24\013021.D
Operator : TL
Acquired : 30 Jan 2024 12:49 pm using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-257 mb2
Misc Info : ERR
Vial Number: 32



File :P:\Proc_GC13\01-30-24\013008.D
Operator : TL
Acquired : 30 Jan 2024 10:24 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 04-259 mb
Misc Info : ERR
Vial Number: 9

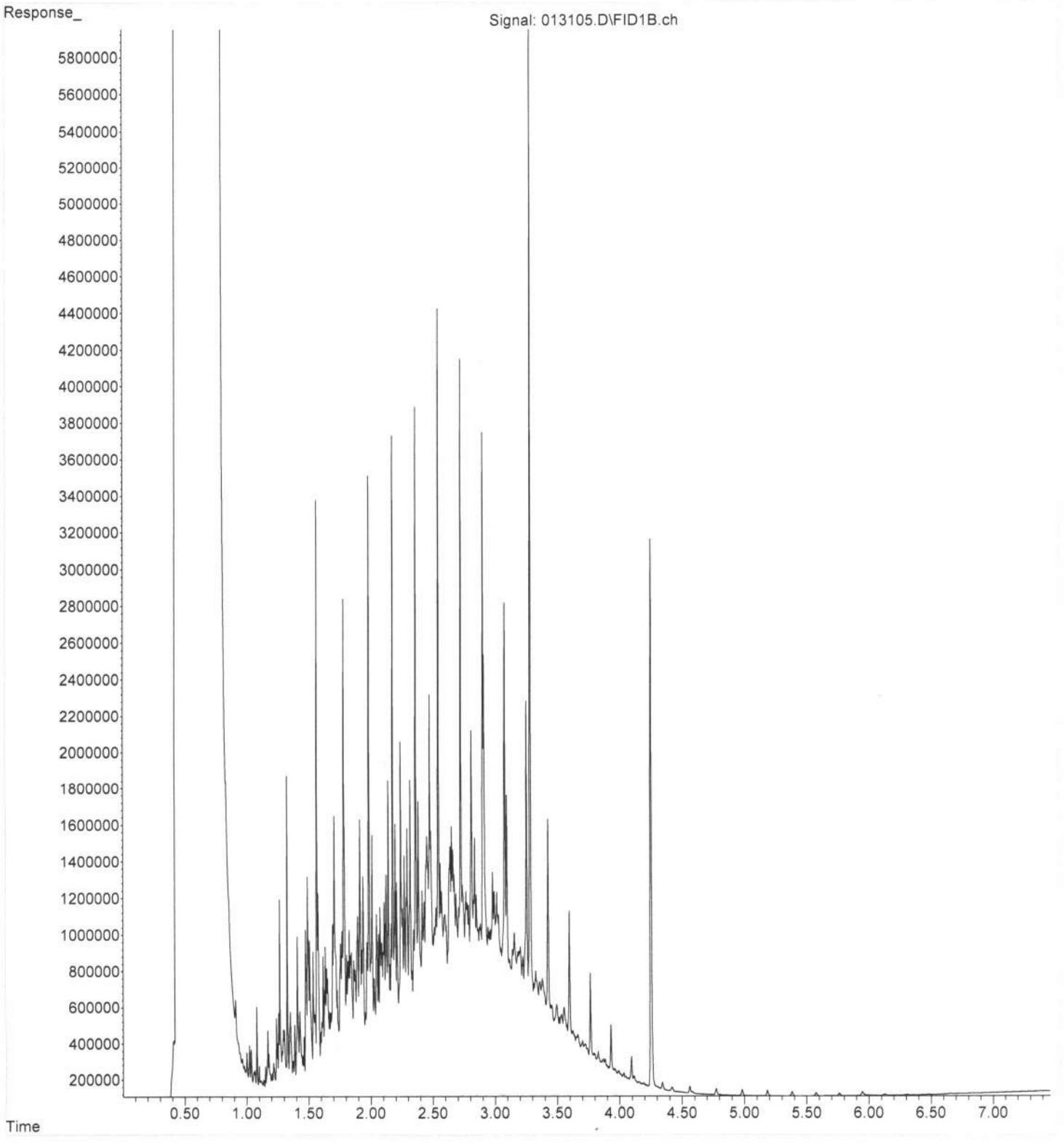


File :P:\Proc_GC13\01-30-24\013003.D
Operator : TL
Acquired : 30 Jan 2024 08:28 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info : ERR
Vial Number: 3



File :P:\Proc_GC13\01-31-24\013105.D
Operator : TL
Acquired : 31 Jan 2024 08:44 am using AcqMethod Dx.M
Instrument : GC13
Sample Name: 500 Dx 70-26F
Misc Info :
Vial Number: 3

ERR



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401358
Work Order Number: 2402008

February 22, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 2/1/2024 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/22/2024*

CLIENT: Friedman & Bruya
Project: 401358
Work Order: 2402008

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402008-001	HA-1-S6	01/26/2024 2:30 PM	02/01/2024 9:30 AM
2402008-002	HA-1-DUP	01/26/2024 3:00 PM	02/01/2024 9:30 AM
2402008-003	HA-2-S7	01/25/2024 10:45 AM	02/01/2024 9:30 AM
2402008-004	HA-3-S6	01/23/2024 4:40 PM	02/01/2024 9:30 AM
2402008-005	MW-23D-S6	01/22/2024 3:10 PM	02/01/2024 9:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402008**
Date: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-001 **Collection Date:** 1/26/2024 2:30:00 PM
Client Sample ID: **HA-1-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	22.7	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C8-C10)	ND	22.7	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:12:44 PM
Surr: 1-Chlorooctadecane	64.4	50 - 150	H	%Rec	1	2/22/2024 12:12:44 PM
Surr: o-Terphenyl	80.6	50 - 150	H	%Rec	1	2/22/2024 12:12:44 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	ND	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C6-C8)	20.0	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aliphatic Hydrocarbon (C10-C12)	43.8	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C8-C10)	101	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C10-C12)	57.9	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Aromatic Hydrocarbon (C12-C13)	33.9	17.1	D	mg/Kg-dry	10	2/7/2024 4:20:00 AM
Surr: 2,5-dibromotoluene	88.2	60 - 140	D	%Rec	10	2/7/2024 4:20:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.9	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-002 **Collection Date:** 1/26/2024 3:00:00 PM
Client Sample ID: **HA-1-DUP** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	22.6	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C8-C10)	ND	22.6	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C10-C12)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C12-C16)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C16-C21)	17.8	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:34:33 PM
Surr: 1-Chlorooctadecane	63.9	50 - 150	H	%Rec	1	2/22/2024 12:34:33 PM
Surr: o-Terphenyl	76.0	50 - 150	H	%Rec	1	2/22/2024 12:34:33 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	ND	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C6-C8)	123	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C8-C10)	278	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aliphatic Hydrocarbon (C10-C12)	469	93.9	D	mg/Kg-dry	50	2/7/2024 1:16:00 PM
Aromatic Hydrocarbon (C8-C10)	1,460	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Aromatic Hydrocarbon (C10-C12)	688	93.9	D	mg/Kg-dry	50	2/7/2024 1:16:00 PM
Aromatic Hydrocarbon (C12-C13)	215	18.8	D	mg/Kg-dry	10	2/7/2024 4:57:00 AM
Surr: 2,5-dibromotoluene	110	60 - 140	D	%Rec	10	2/7/2024 4:57:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.7	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-003 **Collection Date:** 1/25/2024 10:45:00 AM
Client Sample ID: **HA-2-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	117	22.5	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C10-C12)	93.8	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C12-C16)	53.6	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C8-C10)	332	22.5	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C10-C12)	344	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C12-C16)	252	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C16-C21)	46.9	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.3	H	mg/Kg-dry	1	2/22/2024 12:56:23 PM
Surr: 1-Chlorooctadecane	66.1	50 - 150	H	%Rec	1	2/22/2024 12:56:23 PM
Surr: o-Terphenyl	77.8	50 - 150	H	%Rec	1	2/22/2024 12:56:23 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	114	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aliphatic Hydrocarbon (C6-C8)	498	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aliphatic Hydrocarbon (C8-C10)	304	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aliphatic Hydrocarbon (C10-C12)	456	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aromatic Hydrocarbon (C8-C10)	1,760	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Aromatic Hydrocarbon (C10-C12)	695	183	D	mg/Kg-dry	100	2/7/2024 1:52:00 PM
Aromatic Hydrocarbon (C12-C13)	205	18.3	D	mg/Kg-dry	10	2/7/2024 5:33:00 AM
Surr: 2,5-dibromotoluene	111	60 - 140	D	%Rec	10	2/7/2024 5:33:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	11.2	0.500		wt%	1	2/2/2024 9:30:30 AM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-004 **Collection Date:** 1/23/2024 4:40:00 PM
Client Sample ID: **HA-3-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C10-C12)	18.9	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C12-C16)	12.5	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C8-C10)	27.4	21.9	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C10-C12)	60.7	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C12-C16)	61.9	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C16-C21)	22.0	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Aromatic Hydrocarbon (C21-C34)	ND	11.0	H	mg/Kg-dry	1	2/22/2024 1:18:23 PM
Surr: 1-Chlorooctadecane	53.7	50 - 150	H	%Rec	1	2/22/2024 1:18:23 PM
Surr: o-Terphenyl	82.3	50 - 150	H	%Rec	1	2/22/2024 1:18:23 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	536	15.8	DH	mg/Kg-dry	10	2/7/2024 6:45:00 AM
Aliphatic Hydrocarbon (C6-C8)	1,530	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aliphatic Hydrocarbon (C8-C10)	553	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aliphatic Hydrocarbon (C10-C12)	802	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C8-C10)	1,920	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C10-C12)	1,120	158	DH	mg/Kg-dry	100	2/7/2024 2:28:00 PM
Aromatic Hydrocarbon (C12-C13)	276	15.8	DH	mg/Kg-dry	10	2/7/2024 6:45:00 AM
Surr: 2,5-dibromotoluene	111	60 - 140	DH	%Rec	10	2/7/2024 6:45:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	8.81	0.500		wt%	1	2/2/2024 9:30:30 AM

Analytical Report

Work Order: **2402008**
Date Reported: **2/22/2024**

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2402008-005 **Collection Date:** 1/22/2024 3:10:00 PM
Client Sample ID: **MW-23D-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 42943		Analyst: AP
Aliphatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C10-C12)	28.5	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C12-C16)	21.3	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C16-C21)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aliphatic Hydrocarbon (C21-C34)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C8-C10)	ND	21.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C12-C16)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C16-C21)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Aromatic Hydrocarbon (C21-C34)	ND	10.9	H	mg/Kg-dry	1	2/22/2024 1:40:09 PM
Surr: 1-Chlorooctadecane	63.7	50 - 150	H	%Rec	1	2/22/2024 1:40:09 PM
Surr: o-Terphenyl	79.0	50 - 150	H	%Rec	1	2/22/2024 1:40:09 PM
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 42804		Analyst: MS
Aliphatic Hydrocarbon (C5-C6)	10.7	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C6-C8)	11.2	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C8-C10)	67.1	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aliphatic Hydrocarbon (C10-C12)	170	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Aromatic Hydrocarbon (C8-C10)	111	1.67	H	mg/Kg-dry	1	2/7/2024 3:44:00 AM
Aromatic Hydrocarbon (C10-C12)	250	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Aromatic Hydrocarbon (C12-C13)	64	167	DH	mg/Kg-dry	100	2/7/2024 12:40:00 PM
Surr: 2,5-dibromotoluene	125	60 - 140	H	%Rec	1	2/7/2024 3:44:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R89374		Analyst: BS
Percent Moisture	8.51	0.500		wt%	1	2/2/2024 9:30:30 AM

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-42943**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89774**	
Client ID: **MBLKS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873777**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	68.7		100.0		68.7	50	150				

Sample ID: **MB-42943**	SampType: **MBLK**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89775**	
Client ID: **MBLKS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873787**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	74.1		100.0		74.1	50	150				

Sample ID: **LCS-42943**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/15/2024**		RunNo: **89774**	
Client ID: **LCSS**	Batch ID: **42943**					Analysis Date: **2/22/2024**		SeqNo: **1873778**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	99.5	20.0	250.0	0	39.8	15.9	130				
Aliphatic Hydrocarbon (C10-C12)	69.3	10.0	125.0	0	55.4	30.4	115				
Aliphatic Hydrocarbon (C12-C16)	72.9	10.0	125.0	0	58.3	39.8	130				
Aliphatic Hydrocarbon (C16-C21)	78.2	10.0	125.0	0	62.6	50.3	123				
Aliphatic Hydrocarbon (C21-C34)	79.2	10.0	125.0	0	63.4	36.6	144				
Surr: 1-Chlorooctadecane	66.3		100.0		66.3	50	150				

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCS-42943**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89775**
Client ID: **LCSS**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873788**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	120	20.0	250.0	0	47.9	18.6	130				
Aromatic Hydrocarbon (C10-C12)	82.4	10.0	125.0	0	65.9	42.7	105				
Aromatic Hydrocarbon (C12-C16)	92.5	10.0	125.0	0	74.0	43.6	124				
Aromatic Hydrocarbon (C16-C21)	89.6	10.0	125.0	0	71.7	49.5	124				
Aromatic Hydrocarbon (C21-C34)	81.2	10.0	125.0	0	65.0	54.8	124				
Surr: o-Terphenyl	66.6		100.0		66.6	50	150				

Sample ID: **LCSD-42943**	SampType: **LCSD**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89774**
Client ID: **LCSS02**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873779**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	94.4	20.0	250.0	0	37.8	15.9	130	99.53	5.24	20	
Aliphatic Hydrocarbon (C10-C12)	68.9	10.0	125.0	0	55.1	30.4	115	69.28	0.565	20	
Aliphatic Hydrocarbon (C12-C16)	77.0	10.0	125.0	0	61.6	39.8	130	72.92	5.43	20	
Aliphatic Hydrocarbon (C16-C21)	81.2	10.0	125.0	0	64.9	50.3	123	78.21	3.71	20	
Aliphatic Hydrocarbon (C21-C34)	85.4	10.0	125.0	0	68.3	36.6	144	79.24	7.49	20	
Surr: 1-Chlorooctadecane	66.7		100.0		66.7	50	150		0		

Sample ID: **LCSD-42943**	SampType: **LCSD**	Units: **mg/Kg**	Prep Date: **2/15/2024**	RunNo: **89775**
Client ID: **LCSS02**	Batch ID: **42943**		Analysis Date: **2/22/2024**	SeqNo: **1873789**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	118	20.0	250.0	0	47.1	18.6	130	119.9	1.81	20	
Aromatic Hydrocarbon (C10-C12)	83.5	10.0	125.0	0	66.8	42.7	105	82.42	1.29	20	
Aromatic Hydrocarbon (C12-C16)	98.3	10.0	125.0	0	78.6	43.6	124	92.52	6.06	20	
Aromatic Hydrocarbon (C16-C21)	96.0	10.0	125.0	0	76.8	49.5	124	89.59	6.88	20	
Aromatic Hydrocarbon (C21-C34)	79.6	10.0	125.0	0	63.7	54.8	124	81.21	1.99	20	
Surr: o-Terphenyl	68.2		100.0		68.2	50	150		0		

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-42804**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **LCSS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868715**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	19.6	2.50	20.00	0	98.2	70	130				
Aliphatic Hydrocarbon (C6-C8)	8.87	2.50	10.00	0	88.7	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.3	2.50	10.00	0	103	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.4	2.50	10.00	0	104	70	130				
Aromatic Hydrocarbon (C8-C10)	48.7	2.50	50.00	0	97.5	70	130				
Aromatic Hydrocarbon (C10-C12)	9.91	2.50	10.00	0	99.1	70	130				
Aromatic Hydrocarbon (C12-C13)	10.4	2.50	10.00	0	104	70	130				
Surr: 2,5-dibromotoluene	2.41		2.500		96.3	60	140				

Sample ID: **MB-42804**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **MBLKS**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868698**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	2.50		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	2.50		0	0						
Surr: 2,5-dibromotoluene	2.37		2.500		95.0	60	140				

Sample ID: **2402008-003BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/6/2024**	RunNo: **89510**
Client ID: **HA-2-S7**	Batch ID: **42804**		Analysis Date: **2/7/2024**	SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	104	18.3		0	0			113.7	8.57	25	D
Aliphatic Hydrocarbon (C6-C8)	499	18.3		0	0			498.5	0.0812	25	D
Aliphatic Hydrocarbon (C8-C10)	419	18.3		0	0			395.4	5.80	25	DE
Aliphatic Hydrocarbon (C10-C12)	525	18.3		0	0			505.0	3.86	25	DE
Aromatic Hydrocarbon (C8-C10)	1,810	18.3		0	0			1,757	3.17	25	D

Work Order: 2402008
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2402008-003BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **HA-2-S7** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868703**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	608	18.3		0	0			596.1	1.91	25	DE
Aromatic Hydrocarbon (C12-C13)	208	18.3		0	0			204.9	1.53	25	D
Surr: 2,5-dibromotoluene	19.0		18.30		104	60	140		0	0	D

Sample ID: **2402008-005BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/6/2024** RunNo: **89510**
Client ID: **MW-23D-S6** Batch ID: **42804** Analysis Date: **2/7/2024** SeqNo: **1868705**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	24.0	1.67	13.35	10.72	99.7	70	130				H
Aliphatic Hydrocarbon (C6-C8)	18.6	1.67	6.673	11.16	111	70	130				H
Aliphatic Hydrocarbon (C8-C10)	73.0	1.67	6.673	67.05	89.0	70	130				H
Aliphatic Hydrocarbon (C10-C12)	152	1.67	6.673	148.0	63.0	70	130				SH
Aromatic Hydrocarbon (C8-C10)	143	1.67	33.36	111.3	95.5	70	130				H
Aromatic Hydrocarbon (C10-C12)	141	1.67	6.673	139.7	15.6	70	130				SH
Aromatic Hydrocarbon (C12-C13)	74.3	1.67	6.673	69.70	68.8	70	130				SH
Surr: 2,5-dibromotoluene	1.82		1.668		109	60	140				H

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402008
Logged by:	Morgan Wilson	Date Received:	2/1/2024 9:30:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	0.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402008

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER	
Fremont	
PROJECT NAME/NO.	PO #
401358	D-655
REMARKS	
EIM and EQuIS4	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	EPH	VPH	Nitrite	Sulfate	RSK-175						Notes
																% Solids
HA-1-S6		1/26/2024	1430	soil	2	x	x									90
HA-1-DUP		1/26/2024	1500	soil	2	x	x									89
HA-2-S7		1/25/2024	1045	soil	2	x	x									89
HA-3-S6		1/23/2024	1640	soil	2	x	x									92
MW-23D-S6		1/22/2024	1510	soil	2	x	x									89

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/1/24	0845
Received by:		Nathan Hoffer	FAI	2/1/24	930
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 401358
Work Order Number: 2401541

February 06, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 1/30/2024 for the analyses presented in the following report.

Total Organic Carbon by EPA 9060

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/06/2024*

CLIENT: Friedman & Bruya
Project: 401358
Work Order: 2401541

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2401541-001	HA-1-S2	01/26/2024 9:35 AM	01/30/2024 12:10 PM
2401541-002	HA-1-S4	01/26/2024 10:55 AM	01/30/2024 12:10 PM
2401541-003	HA-1-S6	01/26/2024 2:30 PM	01/30/2024 12:10 PM
2401541-004	HA-1-Dup	01/26/2024 3:00 PM	01/30/2024 12:10 PM
2401541-005	HA-2-S3	01/24/2024 1:40 PM	01/30/2024 12:10 PM
2401541-006	HA-2-S5	01/24/2024 2:55 PM	01/30/2024 12:10 PM
2401541-007	HA-2-S7	01/24/2024 10:45 AM	01/30/2024 12:10 PM
2401541-008	MW-23D-S4	01/22/2024 12:10 PM	01/30/2024 12:10 PM
2401541-009	MW-23D-S6	01/22/2024 3:10 PM	01/30/2024 12:10 PM
2401541-010	MW-23D-Dup	01/22/2024 3:30 PM	01/30/2024 12:10 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2401541**
Date: **2/6/2024**

CLIENT: Friedman & Bruya
Project: 401358

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-001 **Collection Date:** 1/26/2024 9:35:00 AM
Client Sample ID: **HA-1-S2** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 12:50:00 PM

Lab ID: 2401541-002 **Collection Date:** 1/26/2024 10:55:00 AM
Client Sample ID: **HA-1-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:04:00 PM

Lab ID: 2401541-003 **Collection Date:** 1/26/2024 2:30:00 PM
Client Sample ID: **HA-1-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:17:00 PM

Lab ID: 2401541-004 **Collection Date:** 1/26/2024 3:00:00 PM
Client Sample ID: **HA-1-Dup** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 1:31:00 PM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-005 **Collection Date:** 1/24/2024 1:40:00 PM
Client Sample ID: **HA-2-S3** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 2:58:00 PM

Lab ID: 2401541-006 **Collection Date:** 1/24/2024 2:55:00 PM
Client Sample ID: **HA-2-S5** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:12:00 PM

Lab ID: 2401541-007 **Collection Date:** 1/24/2024 10:45:00 AM
Client Sample ID: **HA-2-S7** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:25:00 PM

Lab ID: 2401541-008 **Collection Date:** 1/22/2024 12:10:00 PM
Client Sample ID: **MW-23D-S4** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:42:00 PM

CLIENT: Friedman & Bruya
Project: 401358

Lab ID: 2401541-009 **Collection Date:** 1/22/2024 3:10:00 PM
Client Sample ID: **MW-23D-S6** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 3:53:00 PM

Lab ID: 2401541-010 **Collection Date:** 1/22/2024 3:30:00 PM
Client Sample ID: **MW-23D-Dup** **Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by EPA 9060				Batch ID: 42791		Analyst: FG
Total Organic Carbon	ND	0.150		%-dry	1	2/2/2024 4:11:00 PM

Work Order: 2401541
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-42791**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **MBLKS**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866871**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.150									

Sample ID: **LCS-42791**	SampType: **LCS**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **LCSS**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866873**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.02	0.150	1.000	0	102	80	120				

Sample ID: **2401522-001ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866874**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.541	0.150						0.4766	12.7	20	

Sample ID: **2401522-001AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866875**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.61	0.150	1.000	0.4766	113	75	125				

Sample ID: **2401522-001AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **2/1/2024**		RunNo: **89413**		
Client ID: **BATCH**	Batch ID: **42791**					Analysis Date: **2/2/2024**		SeqNo: **1866876**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.87	0.150	1.000	0.4766	140	75	125	1.607	15.3	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2401541
CLIENT: Friedman & Bruya
Project: 401358

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **2401557-001ADUP** SampType: **DUP** Units: **%-dry** Prep Date: **2/1/2024** RunNo: **89413**
Client ID: **BATCH** Batch ID: **42791** Analysis Date: **2/2/2024** SeqNo: **1866891**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.96	0.150						13.29	50.2	20	E

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2401541
Logged by:	Morgan Wilson	Date Received:	1/30/2024 12:10:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	2.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2401571

Page # _____ of _____

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.
401358

PO #
D-655mg

REMARKS
EIM & EQuIS4

TURNAROUND TIME
☒ Standard
RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	TOC										Notes
HA-1-S2		1/26/2024	935	soil	1	x										
HA-1-S4		1/26/2024	1055	soil	1	x										
HA-1-S6		1/26/2024	1430	soil	1	x										
HA-1-Dup		1/26/2024	1500	soil	1	x										
HA-2-S3		1/24/2024	1340	soil	1	x										
HA-2-S5		1/24/2024	1455	soil	1	x										
~~HA2-S7~~ HA-2-S7		1/25/2024	1045	soil	1	x										
MW-23D-S4		1/22/2024	1210	soil	1	x										
MW-23D-S6		1/22/2024	1510	soil	1	x										
MW-23D-Dup		1/22/2024	1530	soil	1	x										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Mac Goldman	Friedman and Bruya	01/30	9:55
Received by:		NSR IRM	FAI	1/30	12:10
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

February 27, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the additional results from the testing of material submitted on February 6, 2024 from the Whidbey Marine 0204475-001, F&BI 402067 project. There are 6 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data
HNA0227R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine 0204475-001, F&BI 402067 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
402067 -01	MW-1S
402067 -02	MW-3S
402067 -03	MW-22D
402067 -04	MW-23D

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	02/06/24	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	402067-04 1/50
Date Analyzed:	02/19/24	Data File:	021931.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500 ca	Tetrachloroethene	<2.5 j
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<20
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	1,300
Acetone	<2,500 ca	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	4,600
Hexane	<250	o-Xylene	1,100
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	<50
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	75
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	200
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000 ca	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	560
Benzene	10 j	sec-Butylbenzene	<50
Trichloroethene	<1.5 j	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	14,000 ve	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	270
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50 ca
2-Hexanone	<500		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine 0204475-001
Date Extracted:	02/07/24	Lab ID:	04-0284 mb
Date Analyzed:	02/07/24	Data File:	020709.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	113	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.05 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.05 j	sec-Butylbenzene	<1
Trichloroethene	<0.03 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 02/27/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 402068-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	30-221
Chloromethane	ug/L (ppb)	10	<10	103	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	99	50-150
Bromomethane	ug/L (ppb)	10	<5	94	50-150
Chloroethane	ug/L (ppb)	10	<1	96	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	79	50-150
Acetone	ug/L (ppb)	50	<50	44	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	88	50-150
Hexane	ug/L (ppb)	10	<5	96	50-150
Methylene chloride	ug/L (ppb)	10	<5	91	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	92	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	93	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	92	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	10-211
Chloroform	ug/L (ppb)	10	<1	89	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	84	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	91	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	87	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	88	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	100	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	88	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	90	50-150
Dibromomethane	ug/L (ppb)	10	<1	93	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	101	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
Toluene	ug/L (ppb)	10	<1	95	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	99	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
Tetrachloroethene	ug/L (ppb)	10	3.6	95 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	105	50-150
Chlorobenzene	ug/L (ppb)	10	<1	95	50-150
Ethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	50-150
m,p-Xylene	ug/L (ppb)	20	<2	93	50-150
o-Xylene	ug/L (ppb)	10	<1	89	50-150
Styrene	ug/L (ppb)	10	<1	88	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	86	50-150
Bromoform	ug/L (ppb)	10	<5	108	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	96	50-150
Bromobenzene	ug/L (ppb)	10	<1	98	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	114	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	108	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	95	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	94	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	92	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	93	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	105	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	50-150
Naphthalene	ug/L (ppb)	10	<1	103	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	94	50-150

Date of Report: 02/27/24
Date Received: 02/06/24
Project: Whidbey Marine 0204475-001, F&BI 402067

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	105	104	46-206	1
Chloromethane	ug/L (ppb)	10	105	103	59-132	2
Vinyl chloride	ug/L (ppb)	10	100	99	64-142	1
Bromomethane	ug/L (ppb)	10	93	102	50-197	9
Chloroethane	ug/L (ppb)	10	97	96	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	87	75	51-159	15
Acetone	ug/L (ppb)	50	51	52	10-140	2
1,1-Dichloroethene	ug/L (ppb)	10	90	90	64-140	0
Hexane	ug/L (ppb)	10	100	102	54-136	2
Methylene chloride	ug/L (ppb)	10	97	93	43-134	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	96	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	95	70-130	3
1,1-Dichloroethane	ug/L (ppb)	10	94	94	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	97	96	64-148	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	93	70-130	0
Chloroform	ug/L (ppb)	10	87	90	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	75	89	47-112	17
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	93	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	89	88	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	95	92	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	102	101	70-130	1
Benzene	ug/L (ppb)	10	101	98	70-130	3
Trichloroethene	ug/L (ppb)	10	93	90	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	95	70-130	4
Bromodichloromethane	ug/L (ppb)	10	98	94	70-130	4
Dibromomethane	ug/L (ppb)	10	103	100	70-130	3
4-Methyl-2-pentanone	ug/L (ppb)	50	103	105	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	100	96	69-131	4
Toluene	ug/L (ppb)	10	99	97	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	99	96	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	104	101	70-130	3
2-Hexanone	ug/L (ppb)	50	91	90	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	110	103	70-130	7
Tetrachloroethene	ug/L (ppb)	10	99	98	70-130	1
Dibromochloromethane	ug/L (ppb)	10	106	101	60-148	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	109	107	70-130	2
Chlorobenzene	ug/L (ppb)	10	98	99	70-130	1
Ethylbenzene	ug/L (ppb)	10	99	98	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	96	70-130	0
m,p-Xylene	ug/L (ppb)	20	96	96	70-130	0
o-Xylene	ug/L (ppb)	10	92	91	70-130	1
Styrene	ug/L (ppb)	10	91	88	70-130	3
Isopropylbenzene	ug/L (ppb)	10	90	90	70-130	0
Bromoform	ug/L (ppb)	10	119	111	69-138	7
n-Propylbenzene	ug/L (ppb)	10	107	104	70-130	3
Bromobenzene	ug/L (ppb)	10	105	103	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	101	70-130	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	126	122	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	118	114	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	104	100	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	102	100	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	107	104	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	99	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	104	103	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	106	105	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	103	101	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	102	100	70-130	2
1,2-Dichlorobenzene	ug/L (ppb)	10	101	101	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	119	117	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	99	105	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	100	111	70-130	10
Naphthalene	ug/L (ppb)	10	113	119	70-130	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	106	114	70-130	7

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

402067

SAMPLE CHAIN OF CUSTODY

02/06/24

VW4/KS/F31

Page # ____ of ____

Report To H. Good, V. Pehlivan

Company HA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #: 0260475-001

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

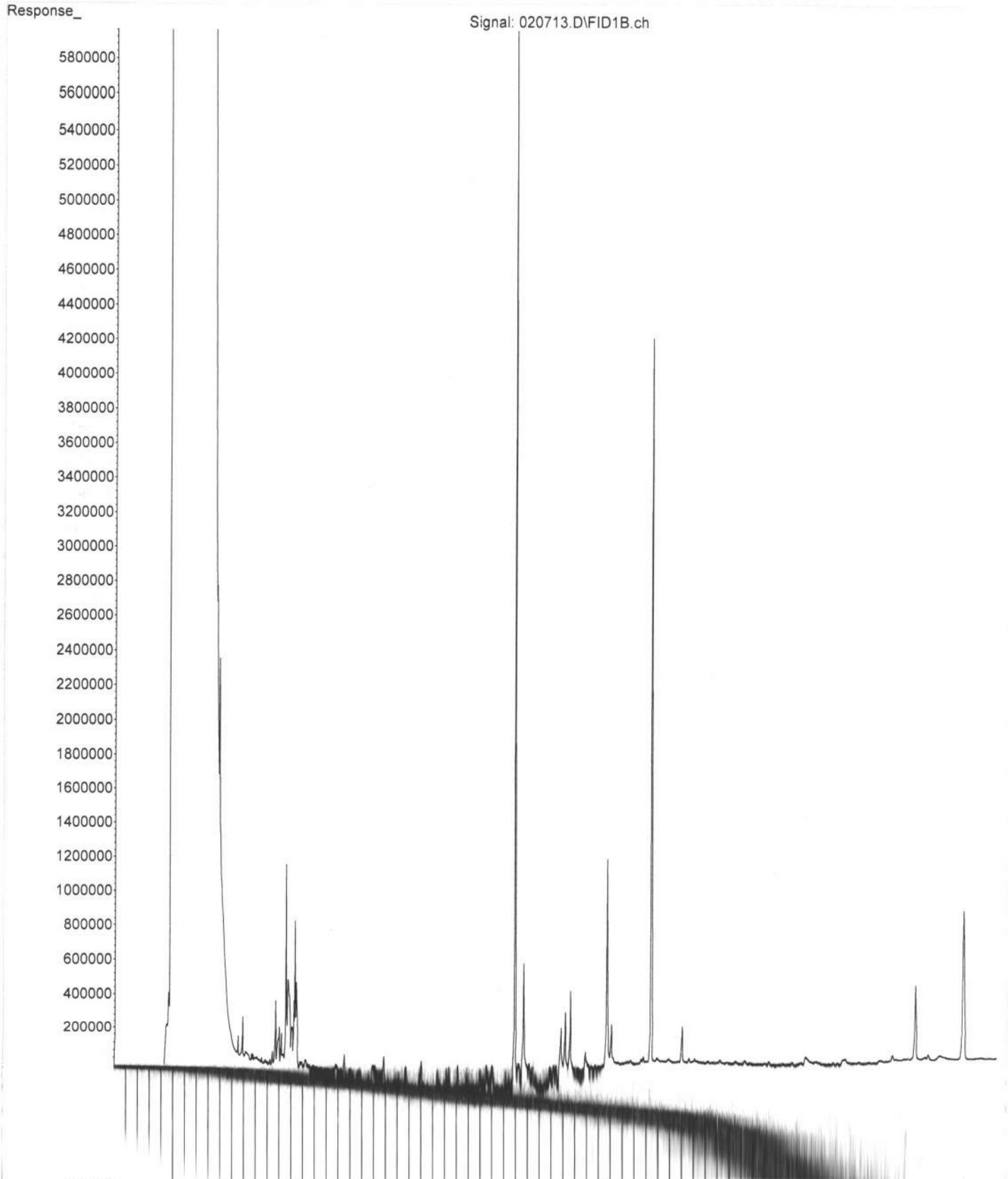
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	Geochemical ~~NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~CVOCs PCBs EPA 8082~~	NwTPH-Dx w/ Silica gel cleanup	TOC	TSS	Tot, Dis As+Pb	Notes
MW-1S	01 A-G	4/5/24	1430	water	7	X	X	X				X	X				Geochemical
MW-3S	02 A-G	↓	1200	↓	7	X	X	X				X	X				parameters:
MW-22D	03 A-O	↓	1540	↓	17	X	X		X	X	X		X	X	X	X	nitrate, nitrite
MW-23D	~~DUP~~ 04 A-O	↓	1240	↓	16	X	X		X	X	X		X	X	X	X	ammonia, chloride
																	sulfate, alkalinity
																	sulfide, MEE
																	dissolved ~~coal~~
																	manganese
																	include Dx, -O
																	chromatograms

NO Fe per HG 2/7/24 ME

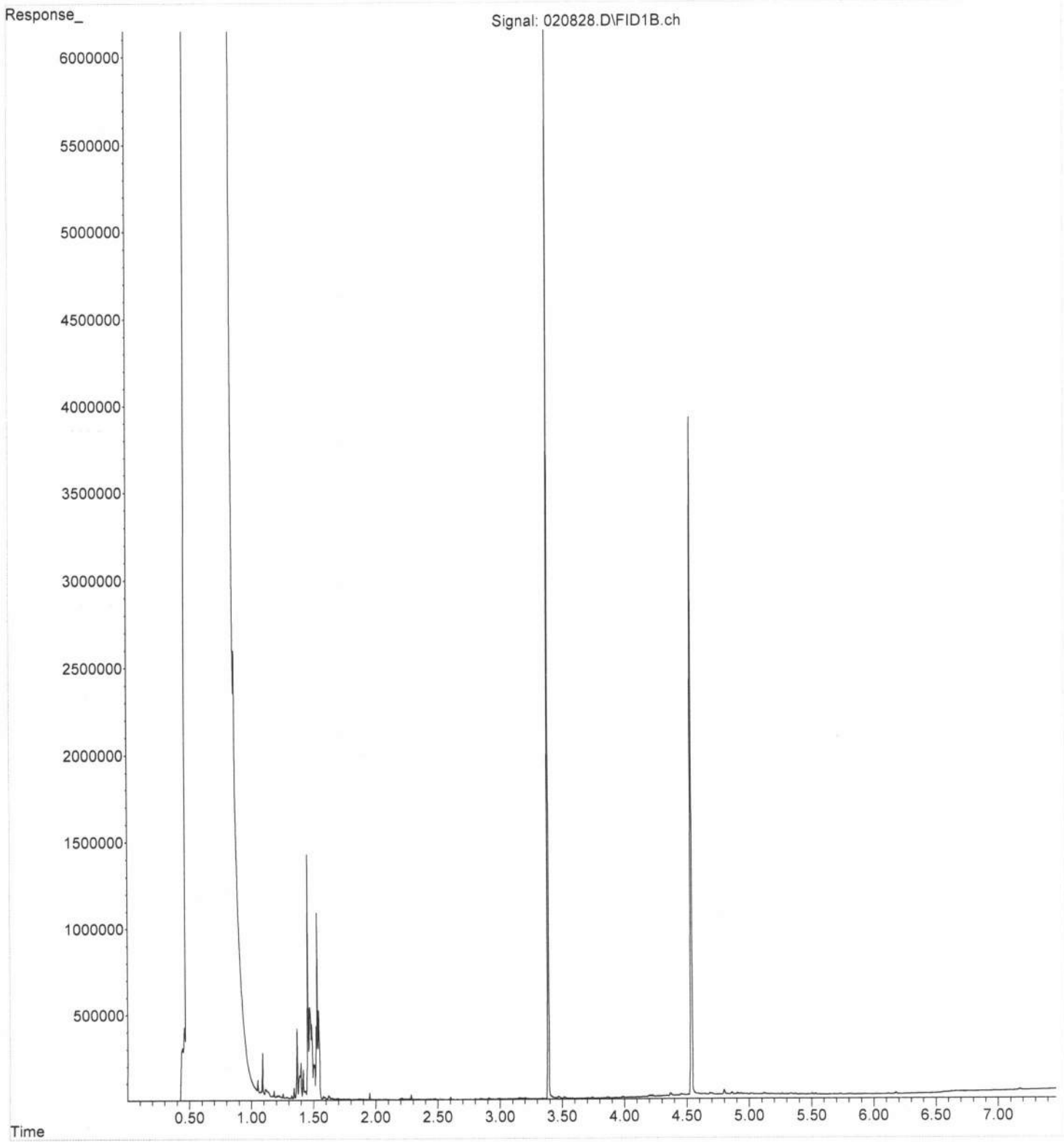
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	4/6/24	1220
Received by: HONG	HONG NGUYEN	FBI	4/6/24	12:20
Relinquished by:		Samples received at 4 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

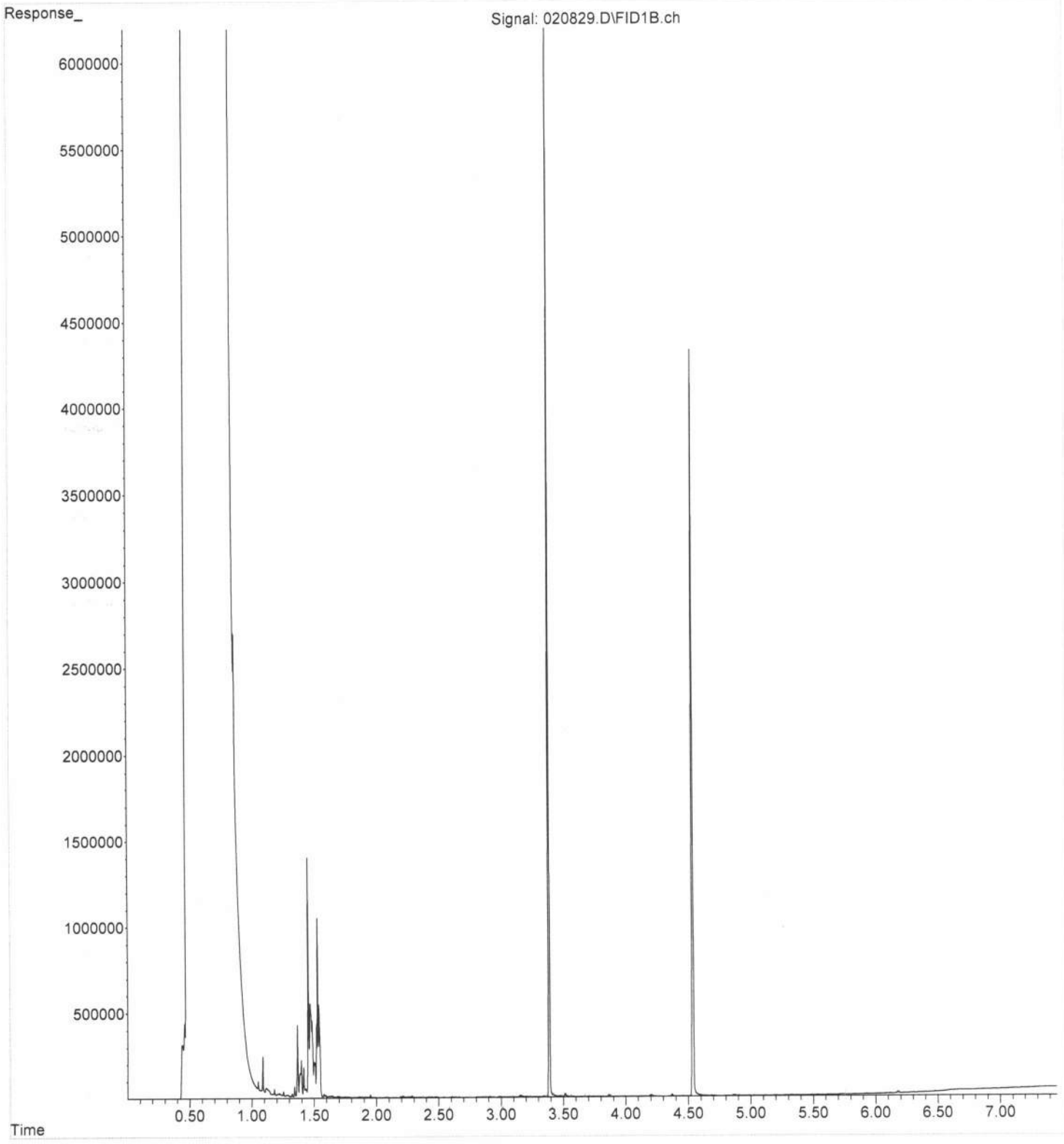
File :P:\Proc_GC14\02-07-24\020713.D
Operator : TL
Acquired : 07 Feb 2024 03:29 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01
Misc Info : ERR
Vial Number: 13



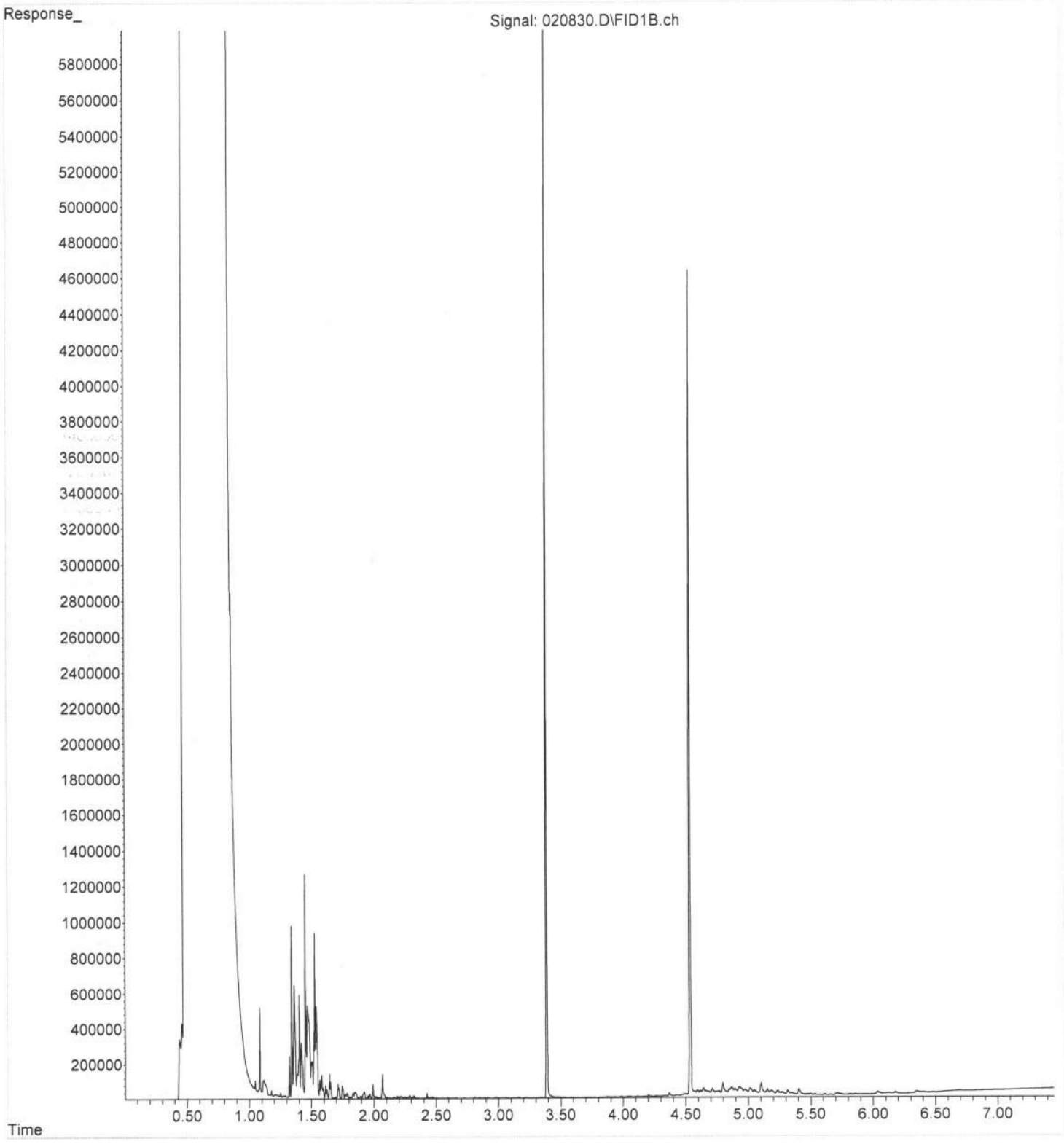
File :P:\Proc_GC14\02-08-24\020828.D
Operator : TL
Acquired : 08 Feb 2024 05:08 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-01 sg
Misc Info : ERR
Vial Number: 23



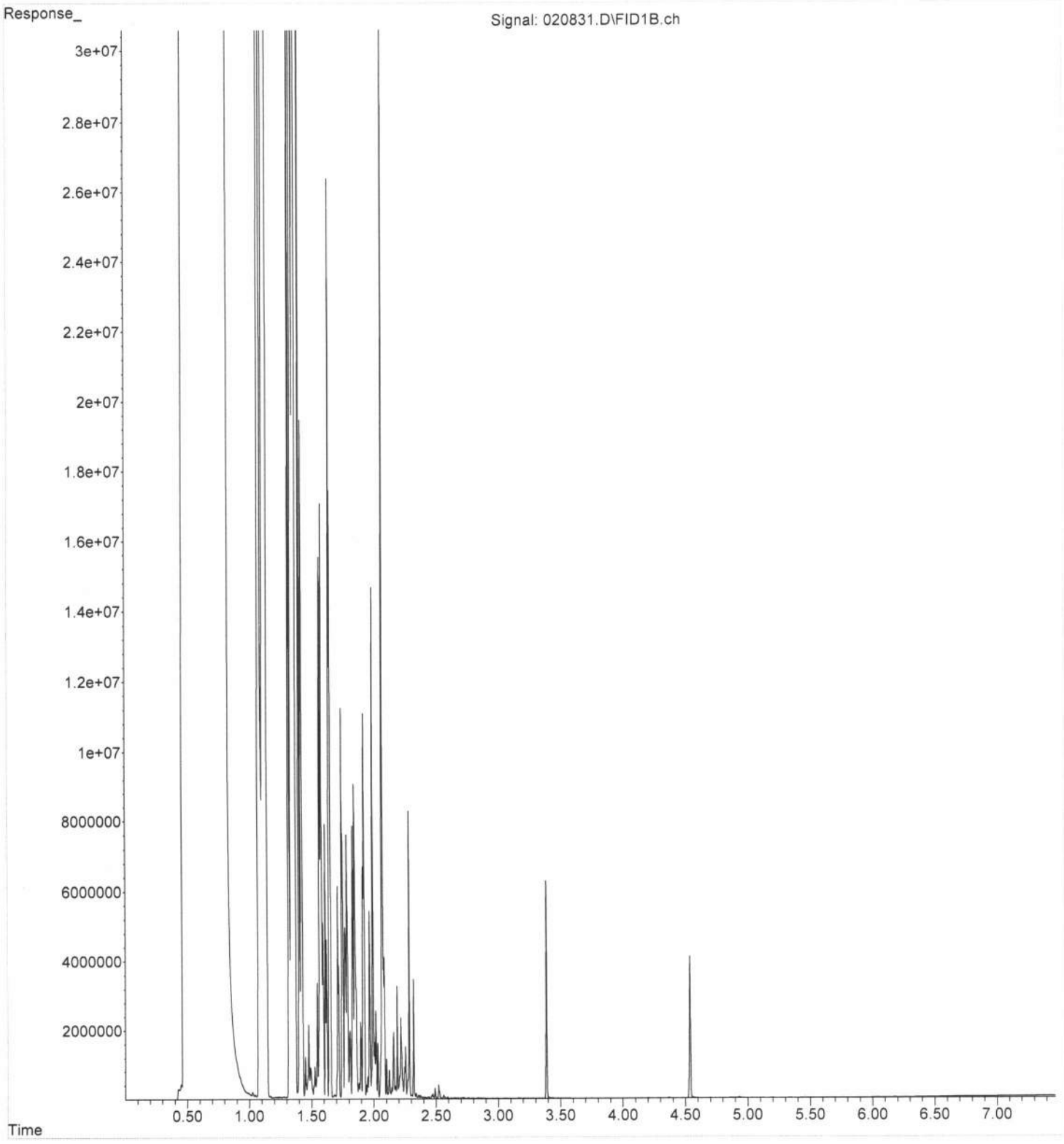
File :P:\Proc_GC14\02-08-24\020829.D
Operator : TL
Acquired : 08 Feb 2024 05:20 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-02 sg
Misc Info : ERR
Vial Number: 24



File :P:\Proc_GC14\02-08-24\020830.D
Operator : TL
Acquired : 08 Feb 2024 05:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-03 sg
Misc Info : ERR
Vial Number: 25

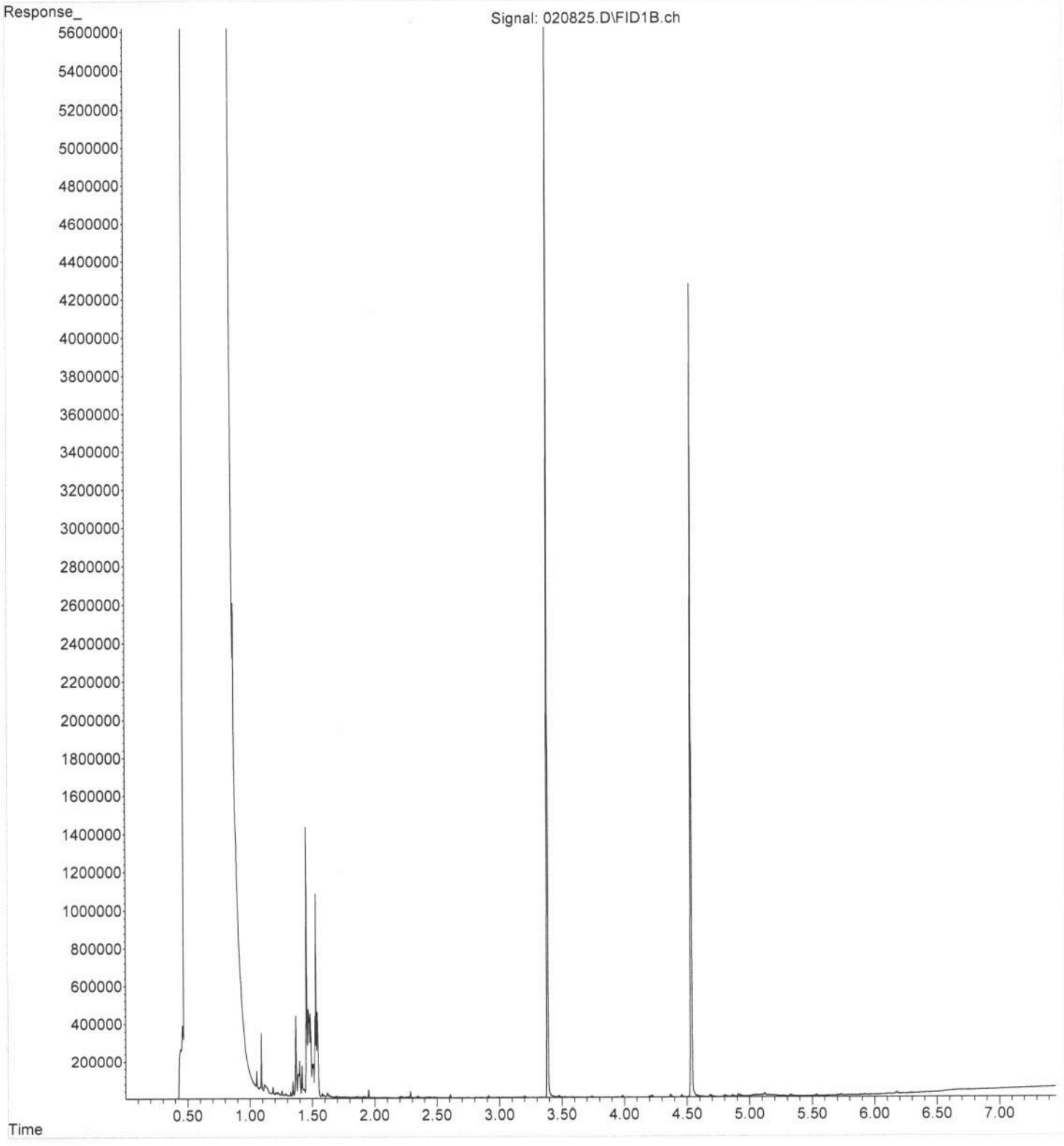


File :P:\Proc_GC14\02-08-24\020831.D
Operator : TL
Acquired : 08 Feb 2024 05:43 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 402067-04 sg
Misc Info : ERR
Vial Number: 26

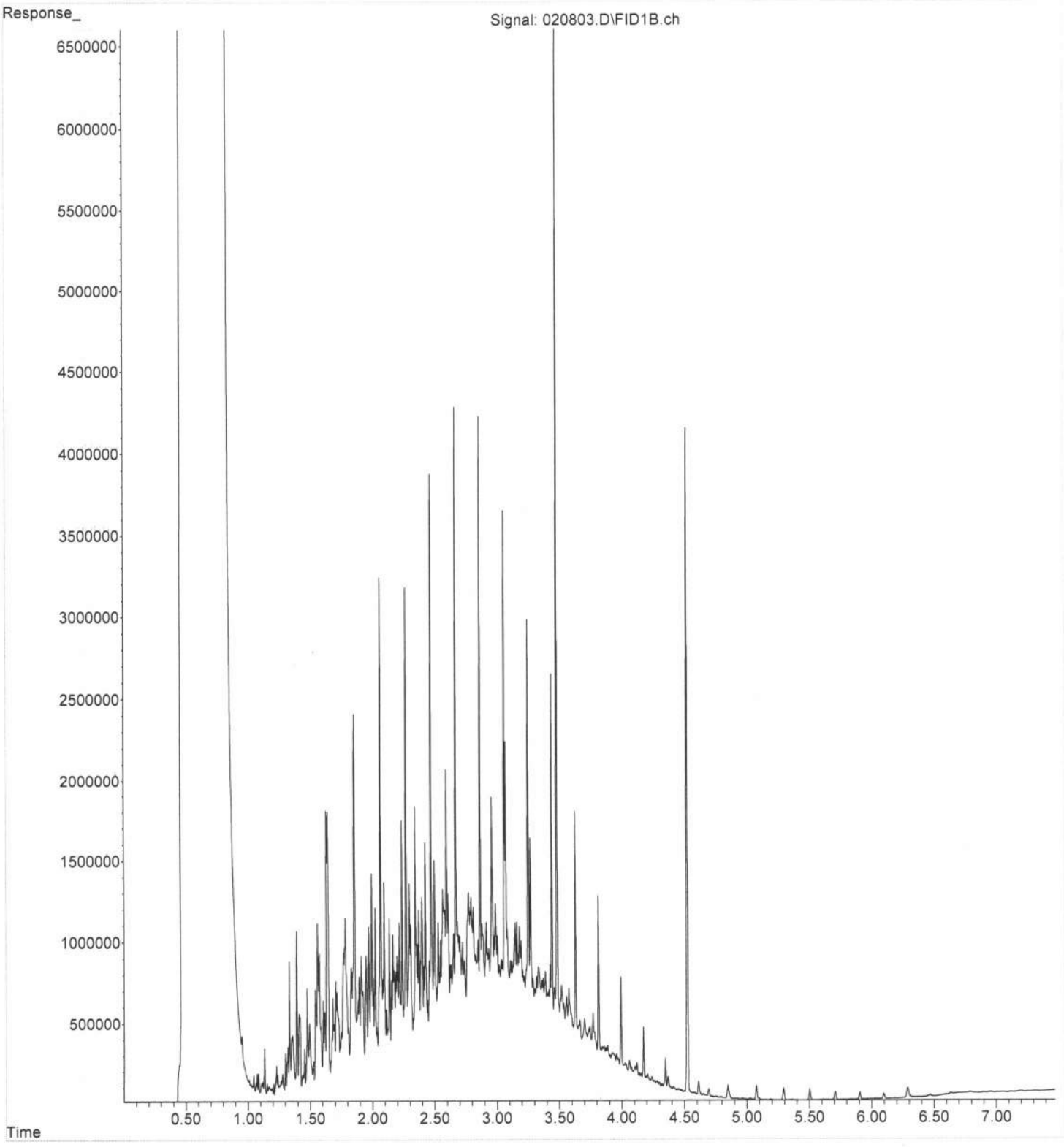


File :P:\Proc_GC14\02-08-24\020825.D
Operator : TL
Acquired : 08 Feb 2024 04:33 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-325 mb sg
Misc Info :
Vial Number: 20

ERR



File :P:\Proc_GC14\02-08-24\020803.D
Operator : TL
Acquired : 08 Feb 2024 09:00 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40D
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 402067
Work Order Number: 2402085

February 13, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *02/13/2024*

CLIENT: Friedman & Bruya
Project: 402067
Work Order: 2402085

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2402085-001	MW-22D	02/05/2024 3:40 PM	02/06/2024 3:40 PM
2402085-002	MW-23D	02/05/2024 12:40 PM	02/06/2024 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2402085**
Date: **2/13/2024**

CLIENT: Friedman & Bruya
Project: 402067

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-001 **Collection Date:** 2/5/2024 3:40:00 PM
Client Sample ID: **MW-22D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	ND	0.00675		mg/L	1	2/12/2024 12:59:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 12:59:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 12:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	6.32	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:25:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:25:00 AM
Sulfate	7.03	3.00	D	mg/L	5	2/7/2024 12:25:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	1.48	0.700		mg/L	1	2/8/2024 9:12:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	147	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:42:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	ND	0.0500		mg/L	1	2/12/2024 11:46:45 AM

CLIENT: Friedman & Bruya
Project: 402067

Lab ID: 2402085-002 **Collection Date:** 2/5/2024 12:40:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R89591		Analyst: LB
Methane	0.0599	0.00675		mg/L	1	2/12/2024 1:02:00 PM
Ethene	ND	0.0146		mg/L	1	2/12/2024 1:02:00 PM
Ethane	ND	0.0151		mg/L	1	2/12/2024 1:02:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 42841		Analyst: SLL
Chloride	27.1	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrite (as N)	ND	0.600	D	mg/L	5	2/7/2024 12:48:00 AM
Nitrate (as N)	ND	0.500	D	mg/L	5	2/7/2024 12:48:00 AM
Sulfate	ND	3.00	D	mg/L	5	2/7/2024 12:48:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R89535		Analyst: FG
Total Organic Carbon	11.3	0.700		mg/L	1	2/8/2024 9:45:00 PM
Total Alkalinity by SM 2320B				Batch ID: R89571		Analyst: SS
Alkalinity, Total (As CaCO3)	244	2.50		mg/L	1	2/13/2024 9:19:17 AM
Ammonia by SM 4500 NH3G				Batch ID: 42892		Analyst: FG
Nitrogen, Ammonia	ND	0.100		mg/L	1	2/12/2024 1:47:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R89559		Analyst: FG
Sulfide	0.0672	0.0500		mg/L	1	2/12/2024 11:46:45 AM

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R89571**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MBLKW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R89571**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **LCSW**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	86.2	126.2				

Sample ID: **2402085-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/13/2024**	RunNo: **89571**
Client ID: **MW-22D**	Batch ID: **R89571**		Analysis Date: **2/13/2024**	SeqNo: **1869830**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	153	2.50						146.5	4.54	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-42892**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **MBLKW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869931**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100									

Sample ID: **LCS-42892**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **LCSW**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869932**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.455	0.100	0.5000	0	91.0	83.5	113.5				

Sample ID: **2402083-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869934**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.100						0		30	

Sample ID: **2402083-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869935**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.479	0.100	0.5000	0	95.8	17	145				

Sample ID: **2402083-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89575**
Client ID: **BATCH**	Batch ID: **42892**		Analysis Date: **2/12/2024**	SeqNo: **1869936**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.473	0.100	0.5000	0	94.6	17	145	0.4790	1.26	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-42841**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **MBLKW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867805**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.120									
Nitrite (as N)	ND	0.120									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									

Sample ID: **LCS-42841**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **LCSW**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867806**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.736	0.120	0.7500	0	98.1	90	110				
Nitrite (as N)	0.716	0.120	0.7500	0	95.5	90	110				
Nitrate (as N)	0.744	0.100	0.7500	0	99.2	90	110				
Sulfate	3.57	0.600	3.750	0	95.1	90	110				

Sample ID: **2401588-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867808**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.211	0.120						0.2080	1.43	20	
Nitrite (as N)	ND	0.120						0		20	
Nitrate (as N)	0.162	0.100						0.1600	1.24	20	
Sulfate	ND	0.600						0		20	

Sample ID: **2401588-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/6/2024**	RunNo: **89464**
Client ID: **BATCH**	Batch ID: **42841**		Analysis Date: **2/6/2024**	SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.5	0.120	0.7500	0.2080	4,180	80	120				ES
Nitrite (as N)	0.735	0.120	0.7500	0	98.0	80	120				
Nitrate (as N)	1.06	0.100	0.7500	0.1600	120	80	120				S

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2401588-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867809**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	9.73	0.600	3.750	0.2550	253	80	120				S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2401588-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/6/2024** RunNo: **89464**
Client ID: **BATCH** Batch ID: **42841** Analysis Date: **2/6/2024** SeqNo: **1867810**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.4	0.120	0.7500	0.2080	4,160	80	120	31.53	0.346	20	ES
Nitrite (as N)	0.727	0.120	0.7500	0	96.9	80	120	0.7350	1.09	20	
Nitrate (as N)	1.05	0.100	0.7500	0.1600	119	80	120	1.061	0.947	20	
Sulfate	9.59	0.600	3.750	0.2550	249	80	120	9.733	1.48	20	S

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R89559**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MBLKW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869569**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R89559**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **LCSW**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869570**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.221	0.0500	0.2000	0	111	80	120				

Sample ID: **2402085-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869626**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0614	0.0500						0.06724	9.01	20	

Sample ID: **2402085-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869627**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.279	0.0500	0.2000	0.06724	106	80	120				

Sample ID: **2402085-002CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/12/2024**		RunNo: **89559**		
Client ID: **MW-23D**	Batch ID: **R89559**					Analysis Date: **2/12/2024**		SeqNo: **1869628**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.292	0.0500	0.2000	0.06724	112	80	120	0.2793	4.46	20	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2402099-009CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869640**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.283	0.0500						0.2573	9.44	20	

Sample ID: **2402099-009CMS** SampType: **MS** Units: **mg/L** Prep Date: **2/12/2024** RunNo: **89559**
Client ID: **BATCH** Batch ID: **R89559** Analysis Date: **2/12/2024** SeqNo: **1869641**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.442	0.0500	0.2000	0.2573	92.1	80	120				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R89535**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869134**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R89535**	SampType: **LCS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **LCSW**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869135**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.05	0.700	5.000	0	101	90	116				

Sample ID: **2402046-001ADUP**	SampType: **DUP**	Units: **mg/L-dry**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869138**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	22.0	2.24									

Sample ID: **2402064-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869139**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.5	0.700	5.000	7.032	88.9	41.1	150				

Sample ID: **2402064-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **2/8/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/8/2024**	SeqNo: **1869140**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.8	0.700	5.000	7.032	94.5	41.1	150	11.48	2.44	30	

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **CCB-D**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **MBLKW**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869461**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **2402100-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **2/9/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/9/2024**	SeqNo: **1869477**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.72	0.700						0	0	20	

Sample ID: **2402100-001CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **2/10/2024**	RunNo: **89535**
Client ID: **BATCH**	Batch ID: **R89535**		Analysis Date: **2/10/2024**	SeqNo: **1869438**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.39	0.700	5.000	0	128	41.1	150				

Work Order: 2402085
CLIENT: Friedman & Bruya
Project: 402067

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R89591**	SampType: **LCS**	Units: **ppmv**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **LCSW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870309**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	964	0.00675	1,000	0	96.4	73.6	124				
Ethene	962	0.0146	1,000	0	96.2	76.3	122				
Ethane	1,010	0.0151	1,000	0	101	76.1	123				

Sample ID: **MB-R89591**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **MBLKW**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870308**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00675									
Ethene	ND	0.0146									
Ethane	ND	0.0151									

Sample ID: **2402099-001DREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **2/12/2024**	RunNo: **89591**
Client ID: **BATCH**	Batch ID: **R89591**		Analysis Date: **2/12/2024**	SeqNo: **1870287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	3.33	0.00675						3.177	4.57	30	E
Ethene	ND	0.0146						0		30	
Ethane	ND	0.0151						0		30	

Fremont Analytical
An Alliance Technical Group Company

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2402085
Logged by:	Clare Griggs	Date Received:	2/6/2024 3:40:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2402085

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Fremont

PROJECT NAME/NO.	PO #
402067	D-661

REMARKS

EIM and EQuIS

TURNAROUND TIME

☒ Standard TAT

RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Dispose after 30 days

Return samples

Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate	Nitrite	Ammonia	Chloride	RSK-175	Sulfate	Alkalinity	Sulfide	TOC		Notes
MW-22D		2/5/2024	1540	water	6	x	x	x	x	x	x	x	x	x		
MW-23D		2/5/2024	1240	water	6	x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/6/24	1245
Received by:		Nathan Koffler	FAI	2/6/24	1540
Relinquished by:					
Received by:					

Data Usability Summary Report

Project Name: HNA Whidbey Marine

Project Description: Groundwater Samples

Sample Dates: 7 through 9 May 2024

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, WA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Gabrielle Davis

Validation Date: 24 May 2024

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDGs) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Groups**
2. **Precision and Accuracy [for SDG(s) above]**
3. **Explanations**
4. **Glossary**
5. **Abbreviations**
6. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- National Functional Guidelines (NFG) for Organic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory reporting limit (RL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Groups

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 405142, dated 20 May 2024;
- 405176, dated 22 May 2024; and
- 405181, dated 21 May 2024.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocols.

- Methods E300, SM2320B, RSK175, SM4500-NH3G, SM5310C, and SM4500-S2-D were subcontracted to Fremont Analytical, Inc, an Alliance Technical Group company – Seattle, WA.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- Custody seals were not used when samples were dropped off at the laboratory or service center by the field staff, submitted to a laboratory-provided courier, or when transported between subcontracted laboratories.
- The analysis was not performed on Trip Blank (405181-06) per COC.
- Some containers of sample MW-12D were missing the collection date on the labels.

Analyses were performed on the samples listed in Table 1. Method holding times are listed in Table 2.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues, such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances. Since these additional quality control issues were not required as per the QAPP, these quality control issues were not reviewed.

1.3 MULTIPLE SAMPLE RESULTS

The laboratory reported multiple results for the samples listed below. The validator chose the results that best met the DQOs of the project.

Lab ID	Analysis Date/Time	Method	Analyte	Qualification
405176-02 405181-01 405181-02 405181-05	5/16/2024 14:43 5/16/2024 14:10 5/15/2024 17:24 5/16/2024 16:22 5/16/2024 16:22	SW8270E	Naphthalene and 2-Methylnaphthalene (for 405181-05)	The sample required the dilution due to results exceedance. The laboratory marked the original results non-reportable and the reanalysis results were accepted.
405142-02	5/13/2024 11:21 5/14/2024 13:14	SW8270E	2-Methylnaphthalene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Chrysene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Pyrene	An 8270E internal standard failed the acceptance criteria for sample MW-4S. The sample was diluted and reanalyzed with acceptable results. The laboratory marked the original results for 2-Methylnaphthalene non-reportable and the reanalysis results were accepted. For other analytes original results were accepted.
405176-02 405176-06 405181-01 405181-02 405181-05	5/14/2024 18:16 5/14/2024 19:07 5/15/2024 14:23 5/15/2024 14:28 5/15/2024 14:51	SW6020B	Arsenic	The laboratory reanalyzed the sample at the dilution to confirm the results. The laboratory marked the reanalysis results non-reportable and the original results were accepted.

1.4 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol, with the following exceptions:

Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
E300, Nitrate (as N), Nitrite (as N)	Water	48 Hours	Cool to ≤ 6°C	The following samples were analyzed outside of holding time and were qualified J+/UJ: FD-01, MW-19D, MW-21D, MW-4S, MW-8S

1.5 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified. Dilution of the project samples were required to bring calibration of target analytes within calibration range, matrix interference, foaming at the time of purging, or abundance of non-target analytes.

1.6 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory-specified quality control (QC) limits.

1.7 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits.

1.8 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Lab Sample Number	Matrix Spike/Matrix Spike Duplicate Sample Client ID	Method(s)
2405160-001A	MW-19D	E300.0, SM5310C
405176-01	MW-2S	SW6020B, SW8260D
405176-02	MW-12D	SW6020B
2405202-003	MW-8S	SM 4500 NH3G
2405202-001	MW-12D	E300.0
405181-03	MW-20D	SW8260D
2405200-002	MW-22D	E300.0

The MS/MSD recoveries and the relative percent difference (RPD) between the MS and MSD results were within the specified limits, with the following exceptions:

Sample Type	Method	Parent Sample	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD	E300.0	MW-19D	Nitrate (as N)	38%/40%	NA	None, native sample > 4x the spike added
MS/MSD	SW6020B	MW-12D	Arsenic	56%/64%	J-/UJ	All samples
MS/MSD	SW6020B	MW-12D	Manganese	0%/0%	NA	None, native sample > 4x the spike added
MS	SM 4500 NH3G	MW-8S	Nitrogen, Ammonia	0%	R	MW-19D, MW-4S, MW-9D, MW-22D, MW-23D, MW-12D, MW-21D, MW-8S, MW-17D, FD-01

1.9 BLANK SAMPLE ANALYSIS

Refer to Section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

1.10 DUPLICATE SAMPLE ANALYSIS

Refer to Section E 1.6. The following sample(s) were used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL).

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
405142-01	MW-19D	NWTPH-GX
405142-02	MW-4S	SM2540D
2405160-002	MW-4S	SM2320B
2405160-001	MW-19D	E300.0, SM5310C
2405202-003	MW-8S	SM 4500 NH3G
2405202-001	MW-12D	E300.0
2405200-002	MW-22D	E300.0
2405200-001	MW-9D	RSK-175

The following sample(s) were used for field duplicate analysis. RPDs were all below 35 percent for water and 50 percent for soil (or the absolute difference rule was satisfied if detects were less than 5 times the RL). Any exceptions are noted below and qualified.

Primary Sample ID	Duplicate Sample ID	Method(s)
MW-21D	FD-01	E300, NWTPH-DX, NWTPH-GX, RSK175, SM 2320B, SM 2540D, SM 4500-NH3G, SM 4500-S2-D, SM 5310C, EPA 6020B, EPA 8260D, EPA 8270E

Field Duplicate RPD Calculations:

Analyte	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
	MW-21D	FD-01		
Naphthalene	ND	0.47	NA	J/UJ, Abs. Diff. > RL

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable except for rejected data noted in Table 3. A summary of qualifiers applied to this dataset is shown in Table 3.

2. Precision and Accuracy [for SDG(s) above]

Refer to Section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

3. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post-digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

4. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - FD Field Duplicate Sample
  - N Primary Sample
- Units:
  - µg/kg micrograms per kilogram
  - µg/L micrograms per liter
  - µg/m^3 micrograms per cubic meter
  - mg/kg milligrams per kilogram
  - mg/L milligrams per liter
  - ppb v/v parts per billion volume/volume
  - pCi/L picocuries per liter
  - pg/g picograms per gram
  - pg/L picograms per liter
- Matrices:
  - GW/WG Groundwater
  - QW Water Quality
  - SO Soil
  - WQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - N Normal (method cannot be filtered)
  - D Dissolved (filtered)
  - T Total (unfiltered)

5. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
%v/v	Percent volume by volume
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DoD	Department of Defense
DQO	data quality objective
DUSR	Data Usability Summary Report
EIS	Extraction Internal Standard
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
H_2	Hydrogen gas
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MBK	Method Blank Contamination
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	not applicable
ND	Non-Detect
NFG	National Functional Guidelines
NH_3	Ammonia
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorbutanoic Acid
PFD	Perfluorodecalin
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonate
PFPeA	Perfluoropentanoic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	Sampling Analysis Plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid-Phase Extraction
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

6. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Concentration (C) Qualifiers:

  U — The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or "ND".

  B — The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers:

  E — The compound was quantitated above the calibration range.

  D — The concentration is based on a diluted sample analysis.

- Validation Qualifiers:

  J — The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  J+ — The result is an estimated quantity, but the result may be biased high.

  J- — The result is an estimated quantity, but the result may be biased low.

  J/UJ — as listed in exception tables J applies to detected data and UJ applies to non-detected data as reported by the laboratory.

  UJ — The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

  NJ — The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is an estimated concentration only.

  R — The sample results were rejected as unusable; the compound may or may not be present in the sample.

  S — Result is suspect. See DUSR for details.

References

1. Haley & Aldrich, Inc., 2024. Quality Assurance Project Plan. Whidbey Marine & Auto Supply Site. Freeland, Washington. January 2024.
2. United States Environmental Protection Agency, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.
3. United States Environmental Protection Agency, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Attachments:

Table 1 – Sample Management
Table 2 – Method Holding Times
Table 3 – System Performance Summary

TABLES

TABLE 1
SAMPLE MANAGEMENT
HNA WHIDBEY MARINE

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
MW-19D-20240507	N	2405160-001A	05/07/2024	WG	G, H
MW-19D-20240507	N	2405160-001B	05/07/2024	WG	J, K
MW-19D-20240507	N	2405160-001C	05/07/2024	WG	L
MW-19D-20240507	N	2405160-001D	05/07/2024	WG	I
MW-4S-20240507	N	2405160-002A	05/07/2024	WG	G, H
MW-4S-20240507	N	2405160-002B	05/07/2024	WG	J, K
MW-4S-20240507	N	2405160-002C	05/07/2024	WG	L
MW-4S-20240507	N	2405160-002D	05/07/2024	WG	I
MW-9D-20240509	N	2405200-001A	05/09/2024	WG	I
MW-9D-20240509	N	2405200-001B	05/09/2024	WG	L
MW-9D-20240509	N	2405200-001C	05/09/2024	WG	G, H
MW-9D-20240509	N	2405200-001D	05/09/2024	WG	J, K
MW-22D-20240509	N	2405200-002A	05/09/2024	WG	I
MW-22D-20240509	N	2405200-002B	05/09/2024	WG	L
MW-22D-20240509	N	2405200-002C	05/09/2024	WG	G, H
MW-22D-20240509	N	2405200-002D	05/09/2024	WG	J, K
MW-23D-20240509	N	2405200-003A	05/09/2024	WG	I
MW-23D-20240509	N	2405200-003B	05/09/2024	WG	L
MW-23D-20240509	N	2405200-003C	05/09/2024	WG	G, H
MW-23D-20240509	N	2405200-003D	05/09/2024	WG	J, K
MW-12D-20240508	N	2405202-001A	05/08/2024	WG	I
MW-12D-20240508	N	2405202-001B	05/08/2024	WG	G, H
MW-12D-20240508	N	2405202-001C	05/08/2024	WG	L
MW-12D-20240508	N	2405202-001D	05/08/2024	WG	J, K
MW-21D-20240508	N	2405202-002A	05/08/2024	WG	I
MW-21D-20240508	N	2405202-002B	05/08/2024	WG	G, H
MW-21D-20240508	N	2405202-002C	05/08/2024	WG	L
MW-21D-20240508	N	2405202-002D	05/08/2024	WG	J, K
MW-8S-20240508	N	2405202-003A	05/08/2024	WG	I
MW-8S-20240508	N	2405202-003B	05/08/2024	WG	G, H
MW-8S-20240508	N	2405202-003C	05/08/2024	WG	L
MW-8S-20240508	N	2405202-003D	05/08/2024	WG	J, K
MW-17D-20240508	N	2405202-004A	05/08/2024	WG	I
MW-17D-20240508	N	2405202-004B	05/08/2024	WG	G, H

TABLE 1
SAMPLE MANAGEMENT
HNA WHIDBEY MARINE

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
MW-17D-20240508	N	2405202-004C	05/08/2024	WG	L
MW-17D-20240508	N	2405202-004D	05/08/2024	WG	J, K
FD-01-20240508	N	2405202-005A	05/08/2024	WG	I
FD-01-20240508	N	2405202-005B	05/08/2024	WG	G, H
FD-01-20240508	N	2405202-005C	05/08/2024	WG	L
FD-01-20240508	N	2405202-005D	05/08/2024	WG	J, K
MW-19D-20240507	N	405142-01	05/07/2024	WG	A, B, C, D, E, F
MW-4S-20240507	N	405142-02	05/07/2024	WG	A, B, C, D, E, F
MW-2S-20240508	N	405176-01	05/08/2024	WG	A, B, C, D, E, F
MW-12D-20240508	N	405176-02	05/08/2024	WG	A, B, C, D, E, F
MW-21D-20240508	N	405176-03	05/08/2024	WG	A, B, C, D, E, F
MW-8S-20240508	N	405176-04	05/08/2024	WG	A, B, C, D, E, F
MW-6S-20240508	N	405176-05	05/08/2024	WG	A, B, C, D, E, F
MW-17D-20240508	N	405176-06	05/08/2024	WG	A, B, C, D, E, F
FD-01-20240508	FD	405176-07	05/08/2024	WG	A, B, C, D, E, F
MW-9D-20240509	N	405181-01	05/09/2024	WG	A, B, C, D, E, F
MW-13D-20240509	N	405181-02	05/09/2024	WG	A, B, C, D, E, F
MW-20D-20240509	N	405181-03	05/09/2024	WG	A, B, C, D, E, F
MW-22D-20240509	N	405181-04	05/09/2024	WG	A, B, C, D, E, F
MW-23D-20240509	N	405181-05	05/09/2024	WG	A, B, C, D, E, F

TABLE 2
METHOD HOLDING TIMES
HNA WHIDBEY MARINE

Method Holding Times			
A	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid preserved 7 days for liquid unpreserved
B	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid preserved 7 days for liquid unpreserved
C	SM2540D	Total Suspended Solids	7 days unpreserved
D	SW6020B	Metals	180 days for liquid preserved
E	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid preserved 7 days for liquid unpreserved
F	SW8270E	Semivolatile Organic Compounds (SVOCs)	7 days extraction / 40 days analysis for liquid unpreserved
G	E300	Inorganic Anions (Chloride, Sulfate)	28 days for liquid unpreserved
		Inorganic Anions (Nitrate, Nitrite)	48 hours for liquid unpreserved
H	SM2320B	Alkalinity	14 days for liquid unpreserved
I	RSK175	Dissolved Gases	14 days for liquid preserved 7 days for liquid unpreserved
J	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid preserved
K	SM5310C	Total Organic Carbon	28 days for liquid preserved
L	SM4500-S2-D	TOTAL SULFIDES	7 days for liquid preserved

TABLE 3
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Basis	Sample ID	Lab ID	Analyte	Fraction	Reportable Result	Reported Result	Validated Result	Reason for Qualifier
405142	E300	NA	MW-19D-20240507	2405160-001A	Nitrate (as N)	N	Yes	34.4	34.4 J+	HTQ
405142	E300	NA	MW-19D-20240507	2405160-001A	Nitrite (as N)	N	Yes	U	UJ	HTQ
405142	SM4500-NH3G	NA	MW-19D-20240507	2405160-001B	Ammonia	N	Yes	U	R	MSD
405142	E300	NA	MW-4S-20240507	2405160-002A	Nitrate (as N)	N	Yes	0.426	0.426 J+	HTQ
405142	E300	NA	MW-4S-20240507	2405160-002A	Nitrite (as N)	N	Yes	0.424	0.424 J+	HTQ
405142	SM4500-NH3G	NA	MW-4S-20240507	2405160-002B	Ammonia	N	Yes	U	R	MSD
405181	SM4500-NH3G	NA	MW-9D-20240509	2405200-001D	Ammonia	N	Yes	U	R	MSD
405181	SM4500-NH3G	NA	MW-22D-20240509	2405200-002D	Ammonia	N	Yes	U	R	MSD
405181	SM4500-NH3G	NA	MW-23D-20240509	2405200-003D	Ammonia	N	Yes	U	R	MSD
405176	SM4500-NH3G	NA	MW-12D-20240508	2405202-001D	Ammonia	N	Yes	U	R	MSD
405176	E300	NA	MW-21D-20240508	2405202-002B	Nitrate (as N)	N	Yes	1.52	1.52 J+	HTQ
405176	E300	NA	MW-21D-20240508	2405202-002B	Nitrite (as N)	N	Yes	U	UJ	HTQ
405176	SM4500-NH3G	NA	MW-21D-20240508	2405202-002D	Ammonia	N	Yes	U	R	MSD
405176	E300	NA	MW-8S-20240508	2405202-003B	Nitrate (as N)	N	Yes	3.96	3.96 J+	HTQ
405176	E300	NA	MW-8S-20240508	2405202-003B	Nitrite (as N)	N	Yes	U	UJ	HTQ
405176	SM4500-NH3G	NA	MW-8S-20240508	2405202-003D	Ammonia	N	Yes	U	R	MSD
405176	SM4500-NH3G	NA	MW-17D-20240508	2405202-004D	Ammonia	N	Yes	U	R	MSD
405176	E300	NA	FD-01-20240508	2405202-005B	Nitrate (as N)	N	Yes	1.52	1.52 J+	HTQ
405176	E300	NA	FD-01-20240508	2405202-005B	Nitrite (as N)	N	Yes	U	UJ	HTQ
405176	SM4500-NH3G	NA	FD-01-20240508	2405202-005D	Ammonia	N	Yes	U	R	MSD
405142	SW6020B	NA	MW-19D-20240507	405142-01	Arsenic	D	Yes	11	11 J-	MSD
405142	SW6020B	NA	MW-19D-20240507	405142-01	Arsenic	T	Yes	12	12 J-	MSD
405142	SW8270E	NA	MW-4S-20240507	405142-02	2-Methylnaphthalene	N	No	46	46	EXE
405142	SW6020B	NA	MW-4S-20240507	405142-02	Arsenic	D	Yes	1.8	1.8 J-	MSD
405142	SW6020B	NA	MW-4S-20240507	405142-02	Arsenic	T	Yes	1.8	1.8 J-	MSD
405142	SW8270E	NA	MW-4S-20240507	405142-02	Benzo(a)anthracene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Benzo(a)pyrene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Benzo(b)fluoranthene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Benzo(g,h,i)perylene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Benzo(k)fluoranthene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Chrysene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Dibenz(a,h)anthracene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Indeno(1,2,3-cd)pyrene	N	No	U	U	ARA
405142	SW8270E	NA	MW-4S-20240507	405142-02	Pyrene	N	No	U	U	ARA
405176	SW6020B	NA	MW-2S-20240508	405176-01	Arsenic	D	Yes	2.3	2.3 J-	MSD
405176	SW6020B	NA	MW-2S-20240508	405176-01	Arsenic	T	Yes	2.5	2.5 J-	MSD
405176	SW6020B	NA	MW-12D-20240508	405176-02	Arsenic	D	No	29	29	ARA
405176	SW6020B	NA	MW-12D-20240508	405176-02	Arsenic	T	Yes	31	31 J-	MSD
405176	SW8270E	NA	MW-12D-20240508	405176-02	Naphthalene	N	No	340	340	EXE
405176	SW6020B	NA	MW-21D-20240508	405176-03	Arsenic	T	Yes	1.9	1.9 J-	MSD
405176	SW6020B	NA	MW-21D-20240508	405176-03	Arsenic	D	Yes	1.7	1.7 J-	MSD
405176	SW8270E	NA	MW-21D-20240508	405176-03	Naphthalene	N	Yes	U	UJ	FDP
405176	SW6020B	NA	MW-8S-20240508	405176-04	Arsenic	T	Yes	3.7	3.7 J-	MSD
405176	SW6020B	NA	MW-8S-20240508	405176-04	Arsenic	D	Yes	3.3	3.3 J-	MSD
405176	SW6020B	NA	MW-6S-20240508	405176-05	Arsenic	T	Yes	U	UJ	MSD
405176	SW6020B	NA	MW-6S-20240508	405176-05	Arsenic	D	Yes	1.3	1.3 J-	MSD
405176	SW6020B	NA	MW-17D-20240508	405176-06	Arsenic	D	No	28	28	ARA
405176	SW6020B	NA	MW-17D-20240508	405176-06	Arsenic	T	Yes	28	28 J-	MSD
405176	SW6020B	NA	FD-01-20240508	405176-07	Arsenic	T	Yes	1.5	1.5 J-	MSD

TABLE 3
SYSTEM PERFORMANCE SUMMARY
HNA WHIDBEY MARINE

SDG	Method	Basis	Sample ID	Lab ID	Analyte	Fraction	Reportable Result	Reported Result	Validated Result	Reason for Qualifier
405176	SW6020B	NA	FD-01-20240508	405176-07	Arsenic	D	Yes	1.7	1.7 J-	MSD
405176	SW8270E	NA	FD-01-20240508	405176-07	Naphthalene	N	Yes	0.47	0.47 J	FDP
405181	SW6020B	NA	MW-9D-20240509	405181-01	Arsenic	D	No	22	22	ARA
405181	SW6020B	NA	MW-9D-20240509	405181-01	Arsenic	T	Yes	35	35 J-	MSD
405181	SW8270E	NA	MW-9D-20240509	405181-01	Naphthalene	N	No	170	170	EXE
405181	SW6020B	NA	MW-13D-20240509	405181-02	Arsenic	D	No	8	8	ARA
405181	SW6020B	NA	MW-13D-20240509	405181-02	Arsenic	T	Yes	9.6	9.6 J-	MSD
405181	SW8270E	NA	MW-13D-20240509	405181-02	Naphthalene	N	No	70	70	EXE
405181	SW6020B	NA	MW-20D-20240509	405181-03	Arsenic	D	Yes	2.1	2.1 J-	MSD
405181	SW6020B	NA	MW-20D-20240509	405181-03	Arsenic	T	Yes	4.7	4.7 J-	MSD
405181	SW6020B	NA	MW-22D-20240509	405181-04	Arsenic	T	Yes	1.5	1.5 J-	MSD
405181	SW6020B	NA	MW-22D-20240509	405181-04	Arsenic	D	Yes	1.1	1.1 J-	MSD
405181	SW8270E	NA	MW-23D-20240509	405181-05	2-Methylnaphthalene	N	No	80	80	EXE
405181	SW6020B	NA	MW-23D-20240509	405181-05	Arsenic	D	No	14	14	ARA
405181	SW6020B	NA	MW-23D-20240509	405181-05	Arsenic	T	Yes	17	17 J-	MSD
405181	SW8270E	NA	MW-23D-20240509	405181-05	Naphthalene	N	No	270	270	EXE

Notes:
FDP = Field duplicate qualifier due to an exceedance of the specified limits.
HTQ = Holding time exceedance.
EXE = Result exceeds the calibration range.
ARA = Another more viable result is available, whether due to dilution, resampling, etc.
MSD = Matrix spike/matrix spike duplicate percent recoveries or relative percent difference were outside the specified limits.
UJ = The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U = The compound was analyzed for but not detected.
R = The sample results were rejected as unusable; the compound may or may not be present in the sample.
J- = The result is an estimated quantity, but the result may be biased low.
J+ = The result is an estimated quantity, but the result may be biased high.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

May 20, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on May 8, 2024 from the Whidbey Marine 0204475-001, F&BI 405142 project. There are 27 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0520R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 8, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine, F&BI 405142 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
405142 -01	MW-19D
405142 -02	MW-4S

The samples were sent to Alliance for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analysis. The report is enclosed.

The 8260D acetone calibration standard exceeded the acceptance criteria. The compound was not detected, therefore this did not represent an out of control condition, and the results are not considered estimates.

An 8270E internal standard failed the acceptance criteria for sample MW-4S. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142
Date Extracted: 05/10/24
Date Analyzed: 05/10/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19D 405142-01	<100	96
MW-4S 405142-02 1/10	15,000	98
Method Blank 04-886 MB	<100	93

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142
Date Extracted: 05/09/24
Date Analyzed: 05/09/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-19D 405142-01	57 x	<250	122
MW-4S 405142-02	2,100 x	<250	122
Method Blank 04-1126 MB	<50	<250	112

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/14/24	Lab ID:	405142-01
Date Analyzed:	05/14/24	Data File:	051433.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	78	126
Toluene-d8	102	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/14/24	Lab ID:	405142-02 1/10
Date Analyzed:	05/14/24	Data File:	051434.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	102	84	115
4-Bromofluorobenzene	92	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500 k	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	160	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	120
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	240
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	470
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	1,700
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	<10
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/14/24	Lab ID:	04-1084 mb
Date Analyzed:	05/14/24	Data File:	051409.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	102	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/10/24	Lab ID:	405142-01
Date Analyzed:	05/13/24	Data File:	051307.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	11	173
2-Fluorobiphenyl	86	25	128
2,4,6-Tribromophenol	77	10	140
Terphenyl-d14	98	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/10/24	Lab ID:	405142-02
Date Analyzed:	05/13/24	Data File:	051308.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	60	11	173
2-Fluorobiphenyl	70	25	128
2,4,6-Tribromophenol	85	10	140
Terphenyl-d14	84 J	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	1.1
2-Methylnaphthalene	46 ve
1-Methylnaphthalene	31
Acenaphthylene	<0.02
Acenaphthene	0.11
Fluorene	0.14
Phenanthrene	0.12
Anthracene	0.037
Fluoranthene	<0.02
Pyrene	<0.02 J
Benz(a)anthracene	<0.02 J
Chrysene	<0.02 J
Benzo(a)pyrene	<0.02 J
Benzo(b)fluoranthene	<0.02 J
Benzo(k)fluoranthene	<0.02 J
Indeno(1,2,3-cd)pyrene	<0.02 J
Dibenz(a,h)anthracene	<0.02 J
Benzo(g,h,i)perylene	<0.02 J

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/10/24	Lab ID:	405142-02 1/10
Date Analyzed:	05/14/24	Data File:	051412.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	61 d	15	144
2-Fluorobiphenyl	65 d	25	128
2,4,6-Tribromophenol	91 d	10	142
Terphenyl-d14	86 d	41	138

Compounds:	Concentration ug/L (ppb)
2-Methylnaphthalene	69
Pyrene	<0.2
Benz(a)anthracene	<0.2
Chrysene	<0.2
Benzo(a)pyrene	<0.2
Benzo(b)fluoranthene	<0.2
Benzo(k)fluoranthene	<0.2
Indeno(1,2,3-cd)pyrene	<0.2
Dibenz(a,h)anthracene	<0.2
Benzo(g,h,i)perylene	<0.2

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/10/24	Lab ID:	04-1127 mb
Date Analyzed:	05/11/24	Data File:	051041.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	15	144
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	49	10	142
Terphenyl-d14	102	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	405142-01
Date Analyzed:	05/12/24	Data File:	405142-01.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	405142-02
Date Analyzed:	05/15/24	Data File:	405142-02.184
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.8
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	I4-375 mb
Date Analyzed:	05/09/24	Data File:	I4-375 mb.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-19D	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	405142-01
Date Analyzed:	05/15/24	Data File:	405142-01.181
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	11
Lead	<1
Manganese	42

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	405142-02
Date Analyzed:	05/12/24	Data File:	405142-02.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.8
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-4S	Client:	Haley & Aldrich, Inc
Date Received:	05/08/24	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	405142-02 x10
Date Analyzed:	05/16/24	Data File:	405142-02 x10.063
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	500

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine, F&BI 405142
Date Extracted:	05/09/24	Lab ID:	I4-375 mb
Date Analyzed:	05/09/24	Data File:	I4-375 mb.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142
Date Extracted: 05/13/24
Date Analyzed: 05/14/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-19D 405142-01	62
MW-4S 405142 -02	<5
Method Blank I4-0395 MB	<5

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 405142-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	110	70-130

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	104	65-151	8

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 405234-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	101	30-221
Chloromethane	ug/L (ppb)	10	<10	91	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	97	50-150
Bromomethane	ug/L (ppb)	10	<5	104	50-150
Chloroethane	ug/L (ppb)	10	<1	105	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	103	50-150
Acetone	ug/L (ppb)	50	<50	65	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Hexane	ug/L (ppb)	10	<5	100	50-150
Methylene chloride	ug/L (ppb)	10	<5	96	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	96	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	92	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	109	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	10-211
Chloroform	ug/L (ppb)	10	1.4	95	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	80	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	102	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	90	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	105	50-150
Benzene	ug/L (ppb)	10	<0.35	95	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	95	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	89	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	97	50-150
Dibromomethane	ug/L (ppb)	10	<1	94	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	99	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	50-150
Toluene	ug/L (ppb)	10	<1	97	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	97	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	91	50-150
2-Hexanone	ug/L (ppb)	50	<10	87	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	91	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	109	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	100	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	101	50-150
Chlorobenzene	ug/L (ppb)	10	<1	93	50-150
Ethylbenzene	ug/L (ppb)	10	<1	100	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	50-150
m,p-Xylene	ug/L (ppb)	20	<2	100	50-150
o-Xylene	ug/L (ppb)	10	<1	98	50-150
Styrene	ug/L (ppb)	10	<1	95	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromoform	ug/L (ppb)	10	<5	103	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	95	50-150
Bromobenzene	ug/L (ppb)	10	<1	103	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	99	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	96	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	94	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	96	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	98	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	97	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	99	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	99	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	103	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	101	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	101	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	99	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	102	50-150
Naphthalene	ug/L (ppb)	10	<1	92	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	100	50-150

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	100	102	46-206	2
Chloromethane	ug/L (ppb)	10	88	92	59-132	4
Vinyl chloride	ug/L (ppb)	10	92	95	64-142	3
Bromomethane	ug/L (ppb)	10	107	102	50-197	5
Chloroethane	ug/L (ppb)	10	101	103	70-130	2
Trichlorofluoromethane	ug/L (ppb)	10	100	102	51-159	2
Acetone	ug/L (ppb)	50	73	70	10-140	4
1,1-Dichloroethene	ug/L (ppb)	10	94	94	64-140	0
Hexane	ug/L (ppb)	10	90	94	54-136	4
Methylene chloride	ug/L (ppb)	10	93	93	43-134	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	94	94	70-130	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	93	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	89	89	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	105	101	64-148	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	94	94	70-130	0
Chloroform	ug/L (ppb)	10	91	93	70-130	2
2-Butanone (MEK)	ug/L (ppb)	50	78	80	47-112	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	97	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	99	100	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	90	92	70-130	2
Carbon tetrachloride	ug/L (ppb)	10	103	103	70-130	0
Benzene	ug/L (ppb)	10	94	95	70-130	1
Trichloroethene	ug/L (ppb)	10	93	94	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	86	85	70-130	1
Bromodichloromethane	ug/L (ppb)	10	96	93	70-130	3
Dibromomethane	ug/L (ppb)	10	92	94	70-130	2
4-Methyl-2-pentanone	ug/L (ppb)	50	101	97	68-130	4
cis-1,3-Dichloropropene	ug/L (ppb)	10	93	93	69-131	0
Toluene	ug/L (ppb)	10	93	95	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	91	89	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	88	90	70-130	2
2-Hexanone	ug/L (ppb)	50	85	87	45-138	2
1,3-Dichloropropane	ug/L (ppb)	10	85	90	70-130	6
Tetrachloroethene	ug/L (ppb)	10	105	105	70-130	0
Dibromochloromethane	ug/L (ppb)	10	94	98	60-148	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	97	100	70-130	3
Chlorobenzene	ug/L (ppb)	10	90	91	70-130	1
Ethylbenzene	ug/L (ppb)	10	96	98	70-130	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	100	101	70-130	1
m,p-Xylene	ug/L (ppb)	20	97	98	70-130	1
o-Xylene	ug/L (ppb)	10	95	96	70-130	1
Styrene	ug/L (ppb)	10	91	93	70-130	2
Isopropylbenzene	ug/L (ppb)	10	94	95	70-130	1
Bromoform	ug/L (ppb)	10	97	99	69-138	2
n-Propylbenzene	ug/L (ppb)	10	87	91	70-130	4
Bromobenzene	ug/L (ppb)	10	99	103	70-130	4
1,3,5-Trimethylbenzene	ug/L (ppb)	10	87	94	70-130	8
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	94	100	70-130	6
1,2,3-Trichloropropane	ug/L (ppb)	10	89	93	70-130	4
2-Chlorotoluene	ug/L (ppb)	10	90	90	70-130	0
4-Chlorotoluene	ug/L (ppb)	10	89	90	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	90	92	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	88	92	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	91	92	70-130	1
p-Isopropyltoluene	ug/L (ppb)	10	91	95	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	96	100	70-130	4
1,4-Dichlorobenzene	ug/L (ppb)	10	94	95	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	94	98	70-130	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	86	95	70-130	10
1,2,4-Trichlorobenzene	ug/L (ppb)	10	88	93	70-130	6
Hexachlorobutadiene	ug/L (ppb)	10	93	95	70-130	2
Naphthalene	ug/L (ppb)	10	85	86	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	86	92	70-130	7

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 405126-08 1/0.25 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	2.5	<0.05	59	55	42-104	7
2-Methylnaphthalene	ug/L (ppb)	2.5	<0.05	65	59	50-150	10
1-Methylnaphthalene	ug/L (ppb)	2.5	0.069	65	59	42-117	10
Acenaphthylene	ug/L (ppb)	2.5	0.018	71	68	50-150	4
Acenaphthene	ug/L (ppb)	2.5	4.5	71 b	46 b	50-150	43 b
Fluorene	ug/L (ppb)	2.5	0.69	74	69	50-150	7
Phenanthrene	ug/L (ppb)	2.5	0.029	70	72	50-150	3
Anthracene	ug/L (ppb)	2.5	0.013	72	73	50-150	1
Fluoranthene	ug/L (ppb)	2.5	0.015	76	78	50-150	3
Pyrene	ug/L (ppb)	2.5	0.020	93	91	50-150	2
Benz(a)anthracene	ug/L (ppb)	2.5	<0.005	86	88	50-150	2
Chrysene	ug/L (ppb)	2.5	<0.005	84	85	50-150	1
Benzo(a)pyrene	ug/L (ppb)	2.5	<0.005	94	92	50-150	2
Benzo(b)fluoranthene	ug/L (ppb)	2.5	<0.005	98	92	50-150	6
Benzo(k)fluoranthene	ug/L (ppb)	2.5	<0.005	95	93	50-150	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2.5	<0.005	89	96	50-150	8
Dibenz(a,h)anthracene	ug/L (ppb)	2.5	<0.005	85	90	50-150	6
Benzo(g,h,i)perylene	ug/L (ppb)	2.5	<1	83	91	50-150	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	72	73	50-104	1
2-Methylnaphthalene	ug/L (ppb)	10	72	73	52-113	1
1-Methylnaphthalene	ug/L (ppb)	10	73	74	51-115	1
Acenaphthylene	ug/L (ppb)	10	82	87	60-114	6
Acenaphthene	ug/L (ppb)	10	77	81	57-110	5
Fluorene	ug/L (ppb)	10	83	85	61-115	2
Phenanthrene	ug/L (ppb)	10	82	86	63-113	5
Anthracene	ug/L (ppb)	10	83	86	65-117	4
Fluoranthene	ug/L (ppb)	10	88	91	68-121	3
Pyrene	ug/L (ppb)	10	94	97	62-133	3
Benz(a)anthracene	ug/L (ppb)	10	93	96	66-131	3
Chrysene	ug/L (ppb)	10	93	97	66-129	4
Benzo(a)pyrene	ug/L (ppb)	10	97	103	66-129	6
Benzo(b)fluoranthene	ug/L (ppb)	10	97	103	55-144	6
Benzo(k)fluoranthene	ug/L (ppb)	10	96	101	58-139	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	93	101	62-136	8
Dibenz(a,h)anthracene	ug/L (ppb)	10	96	101	55-146	5
Benzo(g,h,i)perylene	ug/L (ppb)	10	99	105	58-137	6

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 405144-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	96	99	75-125	3
Lead	ug/L (ppb)	10	<1	84	83	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Lead	ug/L (ppb)	10	101	80-120

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 405144-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	96	99	75-125	3
Lead	ug/L (ppb)	10	<1	84	83	75-125	1
Manganese	ug/L (ppb)	20	852	0 b	150	75-125	200 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Lead	ug/L (ppb)	10	101	80-120
Manganese	ug/L (ppb)	20	101	80-120

Date of Report: 05/20/24
Date Received: 05/08/24
Project: Whidbey Marine, F&BI 405142

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 405142-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	Mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	102	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

405142

SAMPLE CHAIN OF CUSTODY

ME 05-08-24

Page # 1 of 1 K3

Report To H. Good, U. Pehlivan

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME VW2

☑ Standard turnaround

☐ RUSH F2

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Archive samples

☐ Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TSS	Tot/Dis metal	EDB, EDC, MTBE	Geochem	Notes
MW-19D-W	01A-Q	5/7/24	1420	W	17	X	X			X	X		☆	X	X	X	☆ per AN 05/08/24 ME; report as MW-19D
MW-45	02	↓	1300	W	17	X	X			X	X		☆	X	X	X	
																	Geochem:
																	nitrate, nitrite
																	chloride, sulfate
																	ammonia, alkalinity
																	sulfide, MEE
																	TOC, dis. ferrous
										Samples received at						3	iron
																	metals: As, Pb

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	5/8/24	0710
Received by:	VINH	FBI	5-8-24	11:30
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 405142 CLIENT H & NA INITIALS/ DATE: ND 5/8/24

If custody seals are present on cooler, are they intact? ☑ NA ☐ YES ☐ NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☑ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

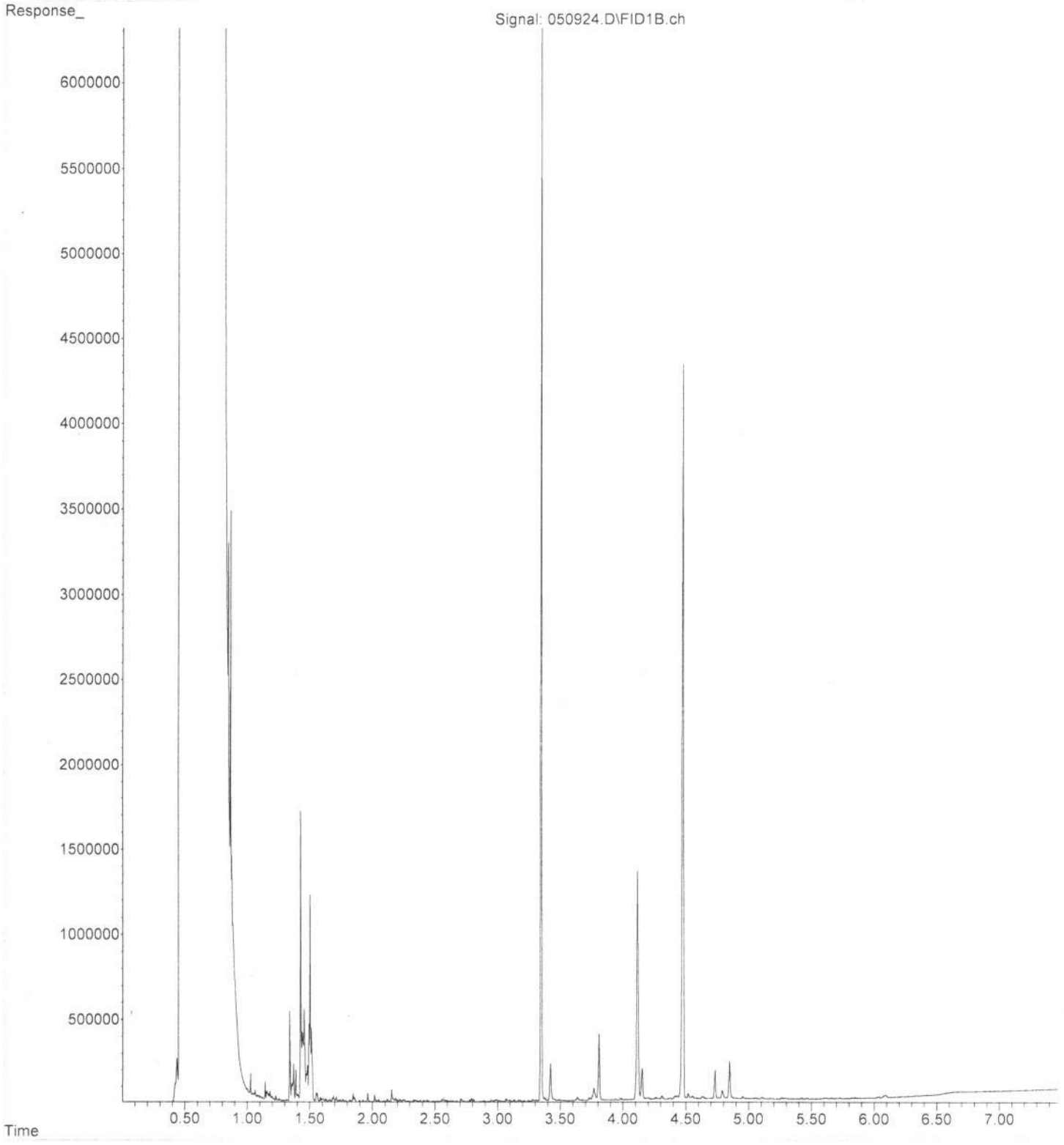
Sample ID's	☑ Yes ☐ No	
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	☑ Yes ☐ No	☐ Not on COC/label
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)

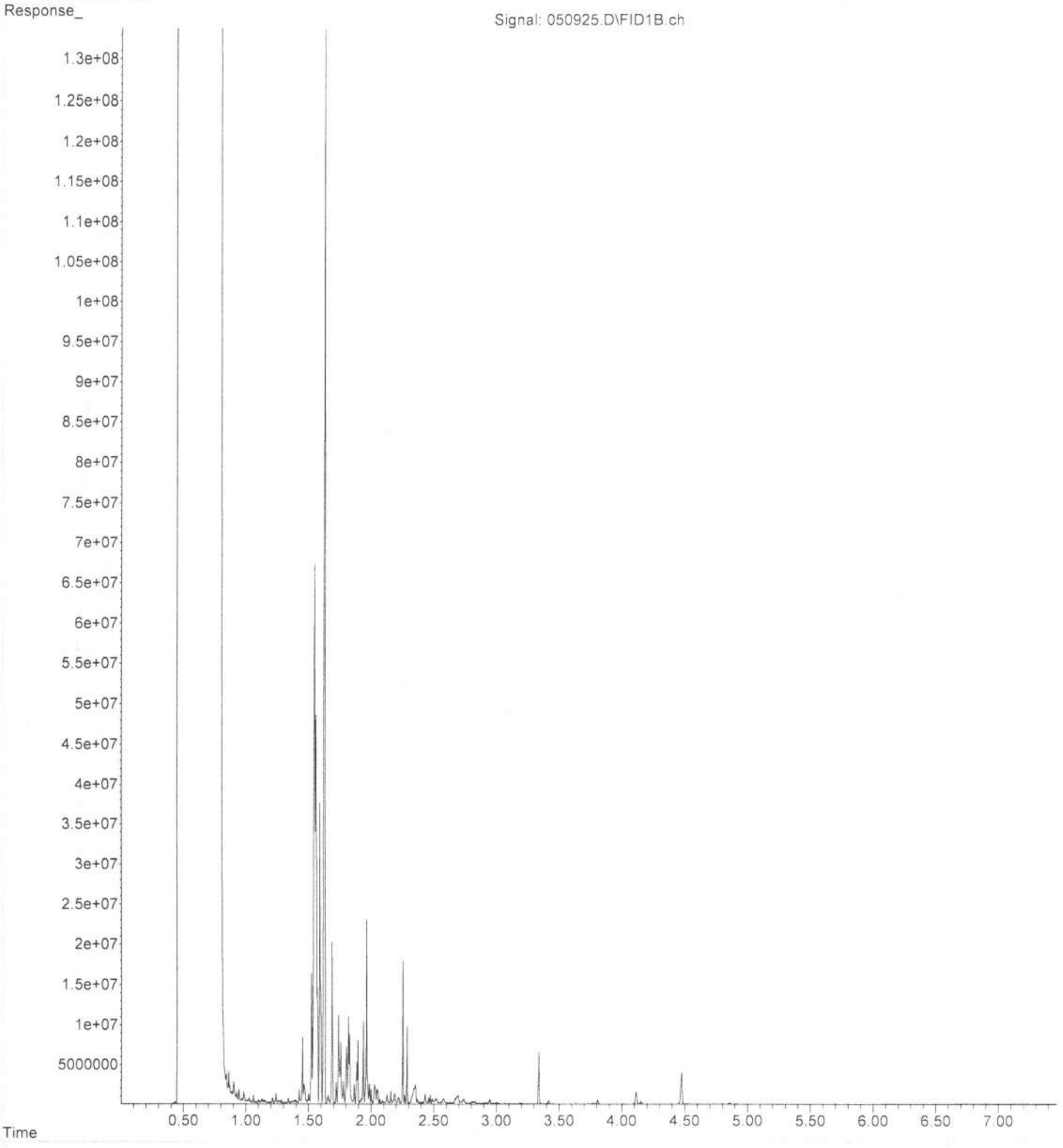
Air Samples: Were any additional canisters/tubes received? ☐ NA ☐ YES ☑ NO

Number of unused TO15 canisters _____ **Number of unused TO17 tubes** _____

File :P:\Proc_GC14\05-09-24\050924.D
Operator : TL
Acquired : 09 May 2024 05:20 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405142-01
Misc Info : ERR
Vial Number: 24

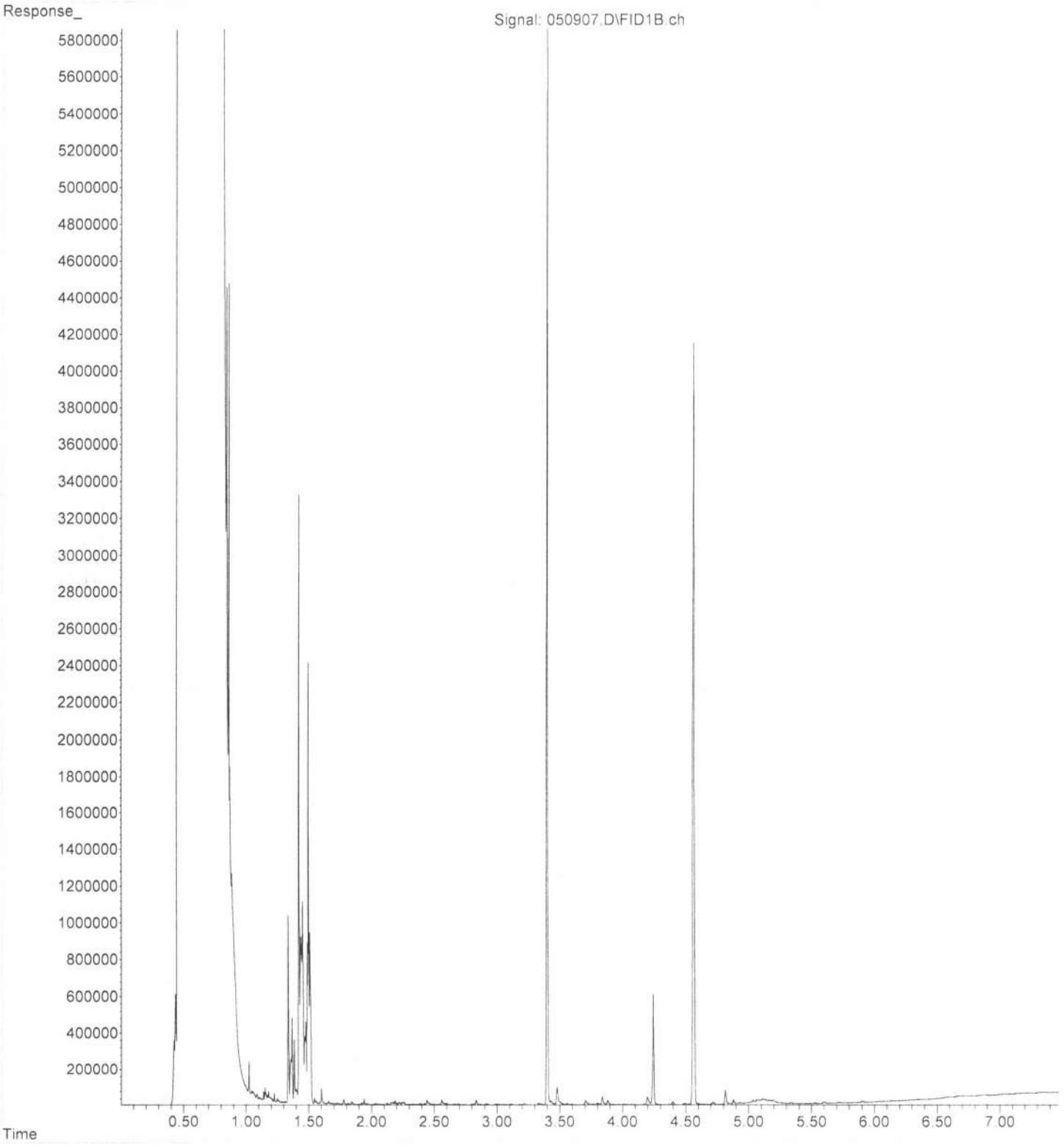


File :P:\Proc_GC14\05-09-24\050925.D
Operator : TL
Acquired : 09 May 2024 05:32 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405142-02
Misc Info : ERR
Vial Number: 25

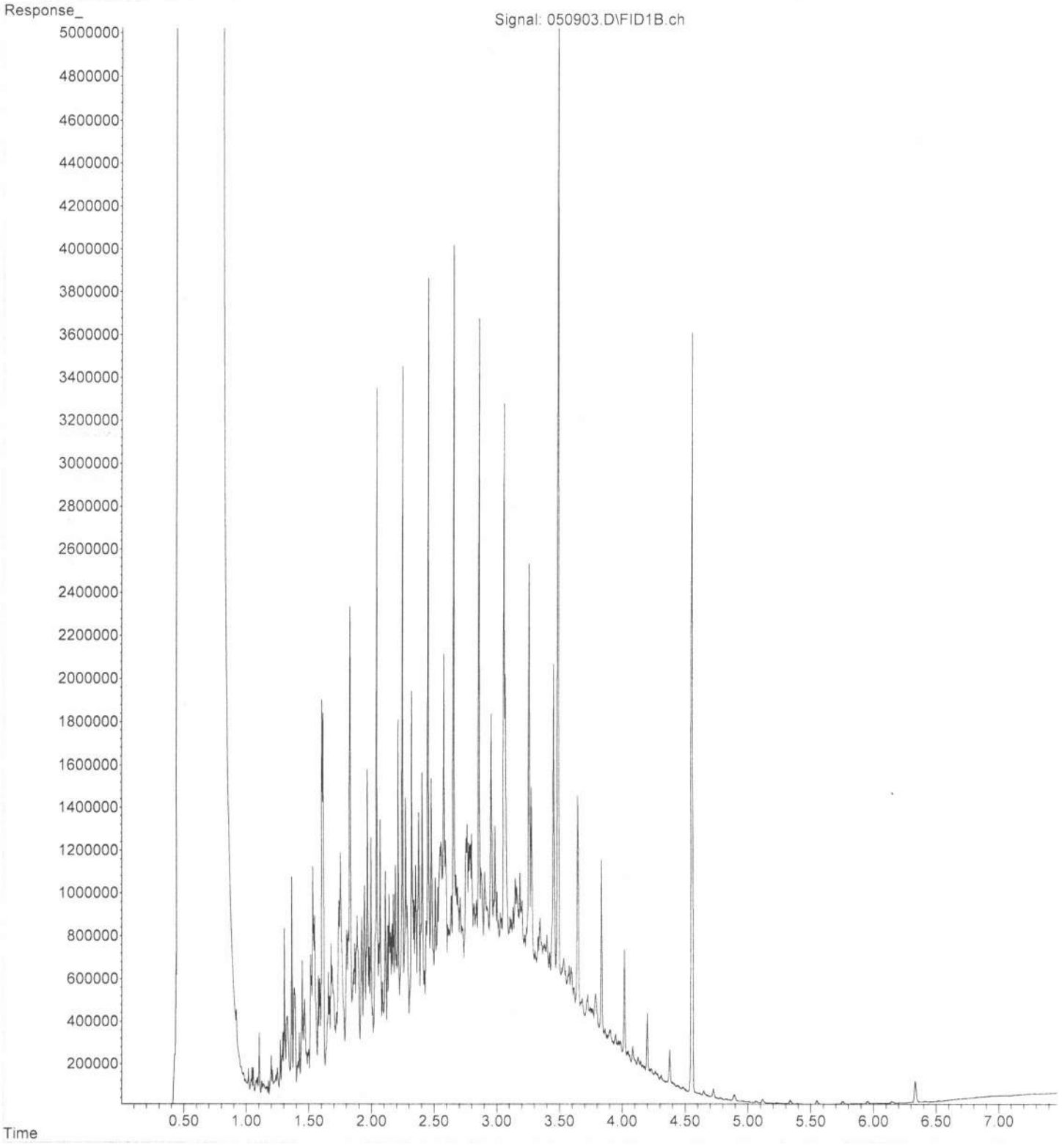


File :P:\Proc_GC14\05-09-24\050907.D
Operator : TL
Acquired : 09 May 2024 01:57 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 04-1126 mb
Misc Info :
Vial Number: 9

ERR



File :P:\Proc_GC14\05-09-24\050903.D
Operator : TL
Acquired : 09 May 2024 08:33 am using AcqMethod DX.M
Instrument : GC14
Sample Name: 500 Dx 71-40G
Misc Info : ERR
Vial Number: 3



3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 405142, E-176
Work Order Number: 2405160

May 16, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 2 sample(s) on 5/8/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *05/16/2024*

CLIENT: Friedman & Bruya
Project: 405142
Work Order: 2405160

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2405160-001	MW-19D	05/07/2024 2:20 PM	05/08/2024 1:09 PM
2405160-002	MW-4S	05/07/2024 1:00 PM	05/08/2024 1:09 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2405160**

Date: **5/16/2024**

CLIENT: Friedman & Bruya
Project: 405142

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2405160**
Date Reported: **5/16/2024**

CLIENT: Friedman & Bruya
Project: 405142

Lab ID: 2405160-001 **Collection Date:** 5/7/2024 2:20:00 PM
Client Sample ID: **MW-19D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91756		Analyst: CO
Methane	0.00690	0.00500		mg/L	1	5/15/2024 1:58:00 PM
Ethene	ND	0.0100		mg/L	1	5/15/2024 1:58:00 PM
Ethane	ND	0.0100		mg/L	1	5/15/2024 1:58:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43905		Analyst: FG
Chloride	30.9	2.00	D	mg/L	10	5/14/2024 1:59:00 AM
Nitrite (as N)	ND	0.200	H	mg/L	1	5/9/2024 6:16:00 PM
Nitrate (as N)	34.4	2.00	DH	mg/L	10	5/14/2024 1:59:00 AM
Sulfate	25.8	1.00		mg/L	1	5/14/2024 1:12:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	1.47	0.700		mg/L	1	5/14/2024 9:06:00 PM
Total Alkalinity by SM 2320B				Batch ID: R91692		Analyst: NR
Alkalinity, Total (As CaCO3)	140	2.50		mg/L	1	5/14/2024 12:01:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 11:36:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.178	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405160**
Date Reported: **5/16/2024**

CLIENT: Friedman & Bruya
Project: 405142

Lab ID: 2405160-002 **Collection Date:** 5/7/2024 1:00:00 PM
Client Sample ID: **MW-4S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91756		Analyst: CO
Methane	0.00887	0.00500		mg/L	1	5/15/2024 1:59:00 PM
Ethene	ND	0.0100		mg/L	1	5/15/2024 1:59:00 PM
Ethane	ND	0.0100		mg/L	1	5/15/2024 1:59:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43905		Analyst: FG
Chloride	21.7	2.00	D	mg/L	10	5/14/2024 2:22:00 AM
Nitrite (as N)	0.424	0.200	H	mg/L	1	5/9/2024 5:48:00 PM
Nitrate (as N)	0.426	0.200	H	mg/L	1	5/9/2024 5:48:00 PM
Sulfate	11.4	1.00		mg/L	1	5/14/2024 1:35:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91575		Analyst: FG
Total Organic Carbon	3.36	0.700		mg/L	1	5/9/2024 11:49:00 PM
Total Alkalinity by SM 2320B				Batch ID: R91692		Analyst: NR
Alkalinity, Total (As CaCO3)	128	2.50		mg/L	1	5/14/2024 12:01:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 11:41:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.0641	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R91692**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91692**
Client ID: **MBLKW**	Batch ID: **R91692**		Analysis Date: **5/14/2024**	SeqNo: **1912530**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R91692**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91692**
Client ID: **LCSW**	Batch ID: **R91692**		Analysis Date: **5/14/2024**	SeqNo: **1912531**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	107	2.50	100.0	0	107	89.7	129.7				

Sample ID: **2405160-002ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91692**
Client ID: **MW-4S**	Batch ID: **R91692**		Analysis Date: **5/14/2024**	SeqNo: **1912534**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	131	2.50						127.8	2.19	20	

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-43897**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **MBLKW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912150**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-43897**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **LCSW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912151**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.458	0.150	0.5000	0	91.6	83.7	113.7				

Sample ID: **2405136-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912153**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405136-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912154**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2405136-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912155**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2405202-003DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912168**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405202-003DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Spike recovery indicates a possible matrix effect.

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-43864** SampType: **MBLK** Units: **mg/L** Prep Date: **5/9/2024** RunNo: **91597**
Client ID: **MBLKW** Batch ID: **43864** Analysis Date: **5/9/2024** SeqNo: **1910534**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									

Sample ID: **2405160-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/9/2024** RunNo: **91597**
Client ID: **MW-19D** Batch ID: **43864** Analysis Date: **5/9/2024** SeqNo: **1910541**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	22.4	0.200						22.36	0.143	20	E

Sample ID: **2405160-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **5/9/2024** RunNo: **91597**
Client ID: **MW-19D** Batch ID: **43864** Analysis Date: **5/9/2024** SeqNo: **1910542**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.697	0.200	0.7500	0	92.9	80	120				
Nitrate (as N)	22.6	0.200	0.7500	22.36	38.0	80	120				ES

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405160-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **5/9/2024** RunNo: **91597**
Client ID: **MW-19D** Batch ID: **43864** Analysis Date: **5/9/2024** SeqNo: **1910543**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.711	0.200	0.7500	0	94.8	80	120	0.6970	1.99	20	
Nitrate (as N)	22.7	0.200	0.7500	22.36	40.4	80	120	22.65	0.0795	20	ES

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-43864**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91597**
Client ID: **LCSW**	Batch ID: **43864**		Analysis Date: **5/9/2024**	SeqNo: **1910544**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.691	0.200	0.7500	0	92.1	90	110				
Nitrate (as N)	0.712	0.200	0.7500	0	94.9	90	110				

Sample ID: **LCS-43905**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **LCSW**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.729	0.200	0.7500	0	97.2	90	110				
Nitrate (as N)	0.725	0.200	0.7500	0	96.7	90	110				
Sulfate	3.54	1.00	3.750	0	94.4	90	110				

Sample ID: **MB-43905**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **MBLKW**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912051**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2405118-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **BATCH**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912057**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	7.47	0.200						7.474	0	20	E
Nitrate (as N)	ND	0.200						0		20	
Sulfate	13.1	1.00						13.28	1.14	20	

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2405118-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/13/2024** SeqNo: **1912058**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.5	80	120				ES
Nitrate (as N)	0.725	0.200	0.7500	0	96.7	80	120				
Sulfate	17.1	1.00	3.750	13.28	102	80	120				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405118-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/13/2024** SeqNo: **1912059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.7	80	120	8.070	0.0248	20	ES
Nitrate (as N)	0.727	0.200	0.7500	0	96.9	80	120	0.7250	0.275	20	
Sulfate	16.9	1.00	3.750	13.28	95.2	80	120	17.10	1.46	20	

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405200-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.36	0.200						5.369	0.0745	20	
Nitrate (as N)	0.977	0.200						0.9910	1.42	20	
Sulfate	5.69	1.00						5.716	0.456	20	

Sample ID: **2405200-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912069**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6.01	0.200	0.7500	5.369	85.7	80	120				E
Nitrate (as N)	1.73	0.200	0.7500	0.9910	98.7	80	120				
Sulfate	9.26	1.00	3.750	5.716	94.5	80	120				

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R91640**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **MBLKW**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911464**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R91640**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **LCSW**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911465**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0	94.9	80	120				

Sample ID: **2405116-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911467**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405116-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911468**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.240	0.0500	0.2000	0.04024	99.9	80	120				

Sample ID: **2405116-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911469**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.247	0.0500	0.2000	0.04024	103	80	120	0.2400	2.72	20	

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2405211-002CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **BATCH**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911496**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405211-002CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **BATCH**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911497**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0.01643	86.7	80	120				

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R91575**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91575**
Client ID: **MBLKW**	Batch ID: **R91575**		Analysis Date: **5/9/2024**	SeqNo: **1910780**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R91575**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91575**
Client ID: **LCSW**	Batch ID: **R91575**		Analysis Date: **5/9/2024**	SeqNo: **1910781**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.10	0.700	5.000	0	102	90.6	119				

Sample ID: **2405072-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91575**
Client ID: **BATCH**	Batch ID: **R91575**		Analysis Date: **5/9/2024**	SeqNo: **1910783**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	3.97	0.700						3.930	0.987	20	

Sample ID: **2405072-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91575**
Client ID: **BATCH**	Batch ID: **R91575**		Analysis Date: **5/9/2024**	SeqNo: **1910784**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	8.90	0.700	5.000	3.930	99.4	74.4	117				

Sample ID: **2405072-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/9/2024**	RunNo: **91575**
Client ID: **BATCH**	Batch ID: **R91575**		Analysis Date: **5/9/2024**	SeqNo: **1910785**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.05	0.700	5.000	3.930	102	74.4	117	8.901	1.65	30	

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-91680**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MBLKW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912582**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-91680**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **LCSW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912583**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.94	0.700	5.000	0	98.7	90.6	119				

Sample ID: **2405160-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MW-19D**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912585**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.46	0.700						1.466	0.616	20	

Sample ID: **2405160-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MW-19D**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912586**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.65	0.700	5.000	1.466	104	74.4	117				

Sample ID: **2405160-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MW-19D**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912587**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.29	0.700	5.000	1.466	96.5	74.4	117	6.654	5.64	30	

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2405211-001DDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/15/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/15/2024**		SeqNo: **1912600**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	2.80	0.700						2.807	0.428	20	

Sample ID: **2405211-001DMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/15/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/15/2024**		SeqNo: **1912601**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.53	0.700	5.000	2.807	94.4	74.4	117				

Work Order: 2405160
CLIENT: Friedman & Bruya
Project: 405142

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R91756** SampType: **LCS** Units: **ppmv** Prep Date: **5/15/2024** RunNo: **91756**
Client ID: **LCSW** Batch ID: **R91756** Analysis Date: **5/15/2024** SeqNo: **1914022**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	991	0.00500	1,000	0	99.1	73.6	124				
Ethene	956	0.0100	1,000	0	95.6	76.3	122				
Ethane	939	0.0100	1,000	0	93.9	76.1	123				

Sample ID: **MB-R91756** SampType: **MBLK** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91756**
Client ID: **MBLKW** Batch ID: **R91756** Analysis Date: **5/15/2024** SeqNo: **1914021**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2405153-001CREP** SampType: **REP** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91756**
Client ID: **BATCH** Batch ID: **R91756** Analysis Date: **5/15/2024** SeqNo: **1914008**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	0.109	0.00500						0.1085	0.796	30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2405160
Logged by:	Clare Griggs	Date Received:	5/8/2024 1:09:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2405160

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO. 405142	PO # E-176
REMARKS EIM and EQuIS 4	

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Nitrate	Nitrite	Chloride	Sulfate	Ammonia	Alkalinity	Sulfide	RSK 175 MEE	TOC		Notes
MW-19D		5/7/2024	1420	water		x	x	x	x	x	x	x	x	x		
MW-4S		5/7/2024	1300	water		x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	5/8/24	1221
Received by:		Briana Ballard	FAI	5/8	13:09
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

May 21, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on May 10, 2024 from the Whidbey Marine Auto 0204475-01, F&BI 405181 project. There are 46 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0521R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 10, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine Auto, F&BI 405181 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
405181 -01	MW-9D
405181 -02	MW-13D
405181 -03	MW-20D
405181 -04	MW-22D
405181 -05	MW-23D
405181 -06	Trip Blank

Samples MW-9D, MW-22D, and MW-23D were sent to Fremont Analytical for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D acetone and 2-butanone calibration standard did not meet the acceptance criteria. The data were flagged accordingly.

The 6020B dissolved manganese calibration standard exceeded the acceptance criteria for the method blank. The metal was not detected, therefore this did not represent an out of control condition, and the results are not considered estimates.

All other quality control requirements were acceptable.

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181
Date Extracted: 05/13/24
Date Analyzed: 05/14/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-9D 405181-01 1/40	57,000	85
MW-13D 405181-02 1/10	14,000	80
MW-20D 405181-03	<100	84
MW-22D 405181-04	160	85
MW-23D 405181-05 1/10	94,000	89
Method Blank 04-889 MB	<100	100

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181
Date Extracted: 05/14/24
Date Analyzed: 05/15/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-9D 405181-01 1/1.2	4,100 x	<300	104
MW-13D 405181-02	1,900 x	<250	115
MW-20D 405181-03 1/1.2	<60	<300	102
MW-22D 405181-04	<50	<250	108
MW-23D 405181-05 1/1.3	7,000 x	<320	105
Method Blank 04-1154 MB	<50	<250	102

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-01 1/100
Date Analyzed:	05/16/24	Data File:	051649.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	89	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<5 j
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	2,300
Acetone	<5,000 ca	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	8,600
Hexane	<500	o-Xylene	4,200
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	150
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	370
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000 ca	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	1,400
Benzene	<5 j	sec-Butylbenzene	<100
Trichloroethene	<5 j	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	1,800	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	530
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-02 1/50
Date Analyzed:	05/16/24	Data File:	051648.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	103	84	115
4-Bromofluorobenzene	91	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	<5 j
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	620
Acetone	<2,500 ca	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	2,600
Hexane	<250	o-Xylene	260
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	<50
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	62
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	140
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000 ca	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	340
Benzene	<5 j	sec-Butylbenzene	<50
Trichloroethene	<5 j	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	<50	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	140
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50
2-Hexanone	<500		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-03
Date Analyzed:	05/16/24	Data File:	051634.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	88	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1.0
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	3.7
Hexane	<5	o-Xylene	1.8
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-04
Date Analyzed:	05/16/24	Data File:	051635.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	99	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	2.5
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	6.5
Hexane	<5	o-Xylene	2.0
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	1.0
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	5.5	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-05 1/200
Date Analyzed:	05/17/24	Data File:	051651.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	107	84	115
4-Bromofluorobenzene	91	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<200	1,3-Dichloropropane	<200
Chloromethane	<2,000	Tetrachloroethene	<5 j
Vinyl chloride	<4	Dibromochloromethane	<100
Bromomethane	<1,000	1,2-Dibromoethane (EDB)	<2
Chloroethane	<200	Chlorobenzene	<200
Trichlorofluoromethane	<200	Ethylbenzene	2,200
Acetone	<10,000 ca	1,1,1,2-Tetrachloroethane	<200
1,1-Dichloroethene	<200	m,p-Xylene	7,900
Hexane	<1,000	o-Xylene	1,900
Methylene chloride	<1,000	Styrene	<200
Methyl t-butyl ether (MTBE)	<200	Isopropylbenzene	<200
trans-1,2-Dichloroethene	<200	Bromoform	<1,000
1,1-Dichloroethane	<200	n-Propylbenzene	<200
2,2-Dichloropropane	<200	Bromobenzene	<200
cis-1,2-Dichloroethene	<200	1,3,5-Trimethylbenzene	300
Chloroform	<200	1,1,2,2-Tetrachloroethane	<40
2-Butanone (MEK)	<4,000 ca	1,2,3-Trichloropropane	<200
1,2-Dichloroethane (EDC)	<40	2-Chlorotoluene	<200
1,1,1-Trichloroethane	<200	4-Chlorotoluene	<200
1,1-Dichloropropene	<200	tert-Butylbenzene	<200
Carbon tetrachloride	<100	1,2,4-Trimethylbenzene	770
Benzene	9.2 j	sec-Butylbenzene	<200
Trichloroethene	<5 j	p-Isopropyltoluene	<200
1,2-Dichloropropane	<200	1,3-Dichlorobenzene	<200
Bromodichloromethane	<100	1,4-Dichlorobenzene	<200
Dibromomethane	<200	1,2-Dichlorobenzene	<200
4-Methyl-2-pentanone	<2,000	1,2-Dibromo-3-chloropropane	<2,000
cis-1,3-Dichloropropene	<80	1,2,4-Trichlorobenzene	<200
Toluene	20,000	Hexachlorobutadiene	<100
trans-1,3-Dichloropropene	<80	Naphthalene	450
1,1,2-Trichloroethane	<100	1,2,3-Trichlorobenzene	<200
2-Hexanone	<2,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	04-1088 mb
Date Analyzed:	05/16/24	Data File:	051609.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	78	126
Toluene-d8	98	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.025 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.025 j	sec-Butylbenzene	<1
Trichloroethene	<0.025 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-01
Date Analyzed:	05/16/24	Data File:	051613.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	73	15	144
2-Fluorobiphenyl	62	25	128
2,4,6-Tribromophenol	80	10	142
Terphenyl-d14	86	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	170 ve
2-Methylnaphthalene	28
1-Methylnaphthalene	26
Acenaphthylene	<0.02
Acenaphthene	0.18
Fluorene	0.21
Phenanthrene	0.11
Anthracene	0.10
Fluoranthene	0.032
Pyrene	0.060
Benz(a)anthracene	0.067
Chrysene	<0.02
Benzo(a)pyrene	0.045
Benzo(b)fluoranthene	0.022
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	0.030
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.062

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-01 1/20
Date Analyzed:	05/17/24	Data File:	051707.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66 d	15	144
2-Fluorobiphenyl	58 d	25	128
2,4,6-Tribromophenol	103 d	10	142
Terphenyl-d14	70 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	160

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-02
Date Analyzed:	05/16/24	Data File:	051614.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	79	10	142
Terphenyl-d14	101	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	70 ve
2-Methylnaphthalene	22
1-Methylnaphthalene	17
Acenaphthylene	<0.02
Acenaphthene	0.046
Fluorene	0.023
Phenanthrene	0.024
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-02 1/10
Date Analyzed:	05/17/24	Data File:	051708.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	81 d	15	144
2-Fluorobiphenyl	76 d	25	128
2,4,6-Tribromophenol	86 d	10	142
Terphenyl-d14	90 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	72

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-03
Date Analyzed:	05/16/24	Data File:	051615.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	15	144
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	58	10	142
Terphenyl-d14	105	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.20
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-04
Date Analyzed:	05/16/24	Data File:	051616.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	15	144
2-Fluorobiphenyl	75	25	128
2,4,6-Tribromophenol	63	10	142
Terphenyl-d14	103	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.51
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-05
Date Analyzed:	05/16/24	Data File:	051617.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	15	144
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	76	10	142
Terphenyl-d14	113	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	270 ve
2-Methylnaphthalene	80 ve
1-Methylnaphthalene	34
Acenaphthylene	<0.02
Acenaphthene	0.14
Fluorene	0.19
Phenanthrene	0.15
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	405181-05 1/100
Date Analyzed:	05/17/24	Data File:	051709.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80 d	15	144
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	227 d	10	142
Terphenyl-d14	70 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	250
2-Methylnaphthalene	68

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine Auto
Date Extracted:	05/16/24	Lab ID:	04-1152 mb
Date Analyzed:	05/16/24	Data File:	051612.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76	15	144
2-Fluorobiphenyl	67	25	128
2,4,6-Tribromophenol	74	10	142
Terphenyl-d14	101	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405181-01
Date Analyzed:	05/16/24	Data File:	405181-01.264
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	35
Lead	5.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405181-02
Date Analyzed:	05/16/24	Data File:	405181-02.265
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	9.6
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405181-03
Date Analyzed:	05/16/24	Data File:	405181-03.270
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.7
Lead	1.8

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405181-04
Date Analyzed:	05/16/24	Data File:	405181-04.271
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.5
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405181-05
Date Analyzed:	05/17/24	Data File:	405181-05.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	17
Lead	1.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	I4-398 mb
Date Analyzed:	05/15/24	Data File:	I4-398 mb.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-01
Date Analyzed:	05/13/24	Data File:	405181-01.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-01 x5
Date Analyzed:	05/15/24	Data File:	405181-01 x5.069
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW-9D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-01 x100
Date Analyzed:	05/20/24	Data File:	405181-01 x100.060
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,700

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-02
Date Analyzed:	05/13/24	Data File:	405181-02.124
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-13D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-02 x5
Date Analyzed:	05/15/24	Data File:	405181-02 x5.070
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	8.0

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-03
Date Analyzed:	05/15/24	Data File:	405181-03.071
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-04
Date Analyzed:	05/15/24	Data File:	405181-04.072
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-04 x10
Date Analyzed:	05/20/24	Data File:	405181-04 x10.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	460

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-05
Date Analyzed:	05/13/24	Data File:	405181-05.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-05 x5
Date Analyzed:	05/15/24	Data File:	405181-05 x5.075
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	14

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D	Client:	Haley & Aldrich, Inc
Date Received:	05/10/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405181-05 x100
Date Analyzed:	05/20/24	Data File:	405181-05 x100.064
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,500

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	I4-390 mb
Date Analyzed:	05/13/24	Data File:	I4-390 mb.074
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1 k

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181
Date Extracted: 05/13/24
Date Analyzed: 05/14/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-9D 405181-01	34
MW-13D 405181-02	<5
MW-20D 405181-03	160
MW-22D 405181-04	36
MW-23D 405181-05	39
Method Blank I4-0395 MB	<5

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 405191-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	92	92	65-151	0

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 405181-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	99	30-221
Chloromethane	ug/L (ppb)	10	<10	86	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	93	50-150
Bromomethane	ug/L (ppb)	10	<5	93	50-150
Chloroethane	ug/L (ppb)	10	<1	99	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	109	50-150
Acetone	ug/L (ppb)	50	<50	69	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
Hexane	ug/L (ppb)	10	<5	89	50-150
Methylene chloride	ug/L (ppb)	10	<5	96	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	98	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	91	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	111	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	10-211
Chloroform	ug/L (ppb)	10	<1	97	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	76	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	101	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	104	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	93	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	108	50-150
Benzene	ug/L (ppb)	10	<0.35	95	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	96	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	83	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	95	50-150
Dibromomethane	ug/L (ppb)	10	<1	98	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	99	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	91	50-150
Toluene	ug/L (ppb)	10	<1	99	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	93	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	91	50-150
2-Hexanone	ug/L (ppb)	50	<10	84	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	89	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	113	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	102	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	102	50-150
Chlorobenzene	ug/L (ppb)	10	<1	97	50-150
Ethylbenzene	ug/L (ppb)	10	1.0	101	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	50-150
m,p-Xylene	ug/L (ppb)	20	3.7	102	50-150
o-Xylene	ug/L (ppb)	10	1.8	102	50-150
Styrene	ug/L (ppb)	10	<1	96	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	101	50-150
Bromoform	ug/L (ppb)	10	<5	100	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	90	50-150
Bromobenzene	ug/L (ppb)	10	<1	99	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	93	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	95	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	91	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	91	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	95	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	94	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	94	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	98	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	101	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	95	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	99	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	102	50-150
Naphthalene	ug/L (ppb)	10	<1	95	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	102	50-150

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	103	105	46-206	2
Chloromethane	ug/L (ppb)	10	86	87	59-132	1
Vinyl chloride	ug/L (ppb)	10	96	95	64-142	1
Bromomethane	ug/L (ppb)	10	106	105	50-197	1
Chloroethane	ug/L (ppb)	10	104	104	70-130	0
Trichlorofluoromethane	ug/L (ppb)	10	109	101	51-159	8
Acetone	ug/L (ppb)	50	69	67	10-140	3
1,1-Dichloroethene	ug/L (ppb)	10	96	95	64-140	1
Hexane	ug/L (ppb)	10	90	89	54-136	1
Methylene chloride	ug/L (ppb)	10	93	92	43-134	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	97	97	70-130	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	95	95	70-130	0
1,1-Dichloroethane	ug/L (ppb)	10	90	90	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	110	108	64-148	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	95	70-130	1
Chloroform	ug/L (ppb)	10	98	95	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	80	81	47-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	100	99	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	104	103	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	89	92	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	108	107	70-130	1
Benzene	ug/L (ppb)	10	95	94	70-130	1
Trichloroethene	ug/L (ppb)	10	96	95	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	85	87	70-130	2
Bromodichloromethane	ug/L (ppb)	10	97	95	70-130	2
Dibromomethane	ug/L (ppb)	10	98	98	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	101	101	68-130	0
cis-1,3-Dichloropropene	ug/L (ppb)	10	92	90	69-131	2
Toluene	ug/L (ppb)	10	97	94	70-130	3
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	90	70-130	5
1,1,2-Trichloroethane	ug/L (ppb)	10	91	87	70-130	4
2-Hexanone	ug/L (ppb)	50	84	83	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	90	85	70-130	6
Tetrachloroethene	ug/L (ppb)	10	111	107	70-130	4
Dibromochloromethane	ug/L (ppb)	10	105	96	60-148	9
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	98	70-130	5
Chlorobenzene	ug/L (ppb)	10	97	93	70-130	4
Ethylbenzene	ug/L (ppb)	10	101	97	70-130	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	101	98	70-130	3
m,p-Xylene	ug/L (ppb)	20	101	97	70-130	4
o-Xylene	ug/L (ppb)	10	100	97	70-130	3
Styrene	ug/L (ppb)	10	92	88	70-130	4
Isopropylbenzene	ug/L (ppb)	10	99	95	70-130	4
Bromoform	ug/L (ppb)	10	109	97	69-138	12
n-Propylbenzene	ug/L (ppb)	10	92	87	70-130	6
Bromobenzene	ug/L (ppb)	10	101	100	70-130	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	95	90	70-130	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	95	98	70-130	3
1,2,3-Trichloropropane	ug/L (ppb)	10	93	88	70-130	6
2-Chlorotoluene	ug/L (ppb)	10	93	88	70-130	6
4-Chlorotoluene	ug/L (ppb)	10	92	89	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	96	92	70-130	4
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	91	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	96	91	70-130	5
p-Isopropyltoluene	ug/L (ppb)	10	98	94	70-130	4
1,3-Dichlorobenzene	ug/L (ppb)	10	100	97	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	99	98	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	99	94	70-130	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	96	94	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	96	93	70-130	3
Hexachlorobutadiene	ug/L (ppb)	10	105	96	70-130	9
Naphthalene	ug/L (ppb)	10	92	88	70-130	4
1,2,3-Trichlorobenzene	ug/L (ppb)	10	99	94	70-130	5

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	67	68	58-93	1
2-Methylnaphthalene	ug/L (ppb)	10	63	69	63-97	9
1-Methylnaphthalene	ug/L (ppb)	10	65	70	62-99	7
Acenaphthylene	ug/L (ppb)	10	78	81	68-111	4
Acenaphthene	ug/L (ppb)	10	76	80	67-104	5
Fluorene	ug/L (ppb)	10	75	83	70-130	10
Phenanthrene	ug/L (ppb)	10	79	82	70-130	4
Anthracene	ug/L (ppb)	10	81	83	70-130	2
Fluoranthene	ug/L (ppb)	10	86	94	70-130	9
Pyrene	ug/L (ppb)	10	87	90	70-130	3
Benz(a)anthracene	ug/L (ppb)	10	88	93	70-130	6
Chrysene	ug/L (ppb)	10	90	95	70-130	5
Benzo(a)pyrene	ug/L (ppb)	10	94	100	70-130	6
Benzo(b)fluoranthene	ug/L (ppb)	10	93	97	70-130	4
Benzo(k)fluoranthene	ug/L (ppb)	10	90	99	70-130	10
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	90	95	70-130	5
Dibenz(a,h)anthracene	ug/L (ppb)	10	89	98	70-130	10
Benzo(g,h,i)perylene	ug/L (ppb)	10	87	94	68-131	8

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 405241-09 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	97	88	75-125	10
Lead	ug/L (ppb)	10	<10	102	95	75-125	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	90	80-120
Lead	ug/L (ppb)	10	98	80-120

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 405182-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	96	90	75-125	6
Lead	ug/L (ppb)	10	<1	93	89	75-125	4
Manganese	ug/L (ppb)	20	164	88 b	60 b	75-125	38 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Lead	ug/L (ppb)	10	98	80-120
Manganese	ug/L (ppb)	20	95	80-120

Date of Report: 05/21/24
Date Received: 05/10/24
Project: Whidbey Marine Auto, F&BI 405181

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 405142-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	Mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	102	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

405181

SAMPLE CHAIN OF CUSTODY

05/10/24 K5/VW3/F3

Page # 1 of 1

Report To Heather Good

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marine auto

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	~~Dissolved Mn BTEX EPA 8021~~	~~MTBE NWTPH-HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~Sulfide PCBs EPA 8082~~	TSS	As&Pb total & dissolved	Anions & Alkalinity	Ammonia & TOC	Notes
MW-9D	01 A-Q	5/9/24	1050	W	17	X	X	X	X	X	X	X	X	X	X	X	
MW-13D	02 A-K	"	1105	"	11	X	X			X	X		X	X			
MW-20D	03 ↓	"	1255	"	11	X	X			X	X		X	X			
MW-22D	04 A-Q	"	1440	"	17	X	X	X	X	X	X	X	X	X	X	X	
MW-23D	05 ↓	"	1310	"	17	X	X	X	X	X	X	X	X	X	X	X	
Trip Blank AP05/10/24	06 A-B	-	-	Water	2												Anions short hold time
								Samples received at 3 °C									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nalcahara	HA	5/10/24	0850
Received by:	Mac Gutzman	FBI	5/10/24	0851
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 405181 CLIENT HNA INITIALS/ DATE: AP 05/10/24

If custody seals are present on cooler, are they intact? ~~☑ NA~~ AP ☑ YES ☐ NO

Cooler/Sample temperature 3 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

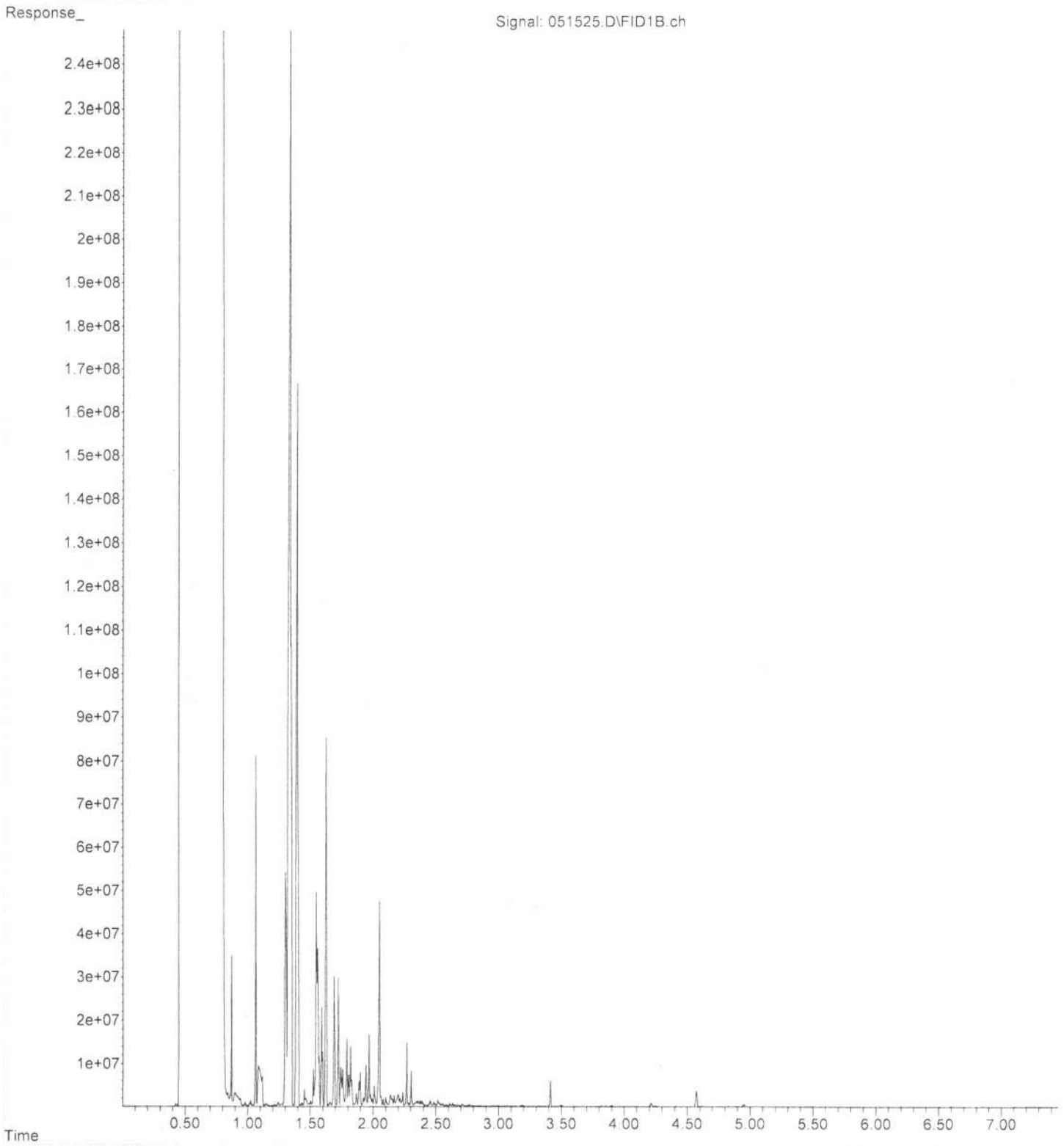
Sample ID's	☑ Yes ☐ No	
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	~~☑ Yes~~ ☑ No	☑ Not on COC/label
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☑ NA ☐ YES ☐ NO

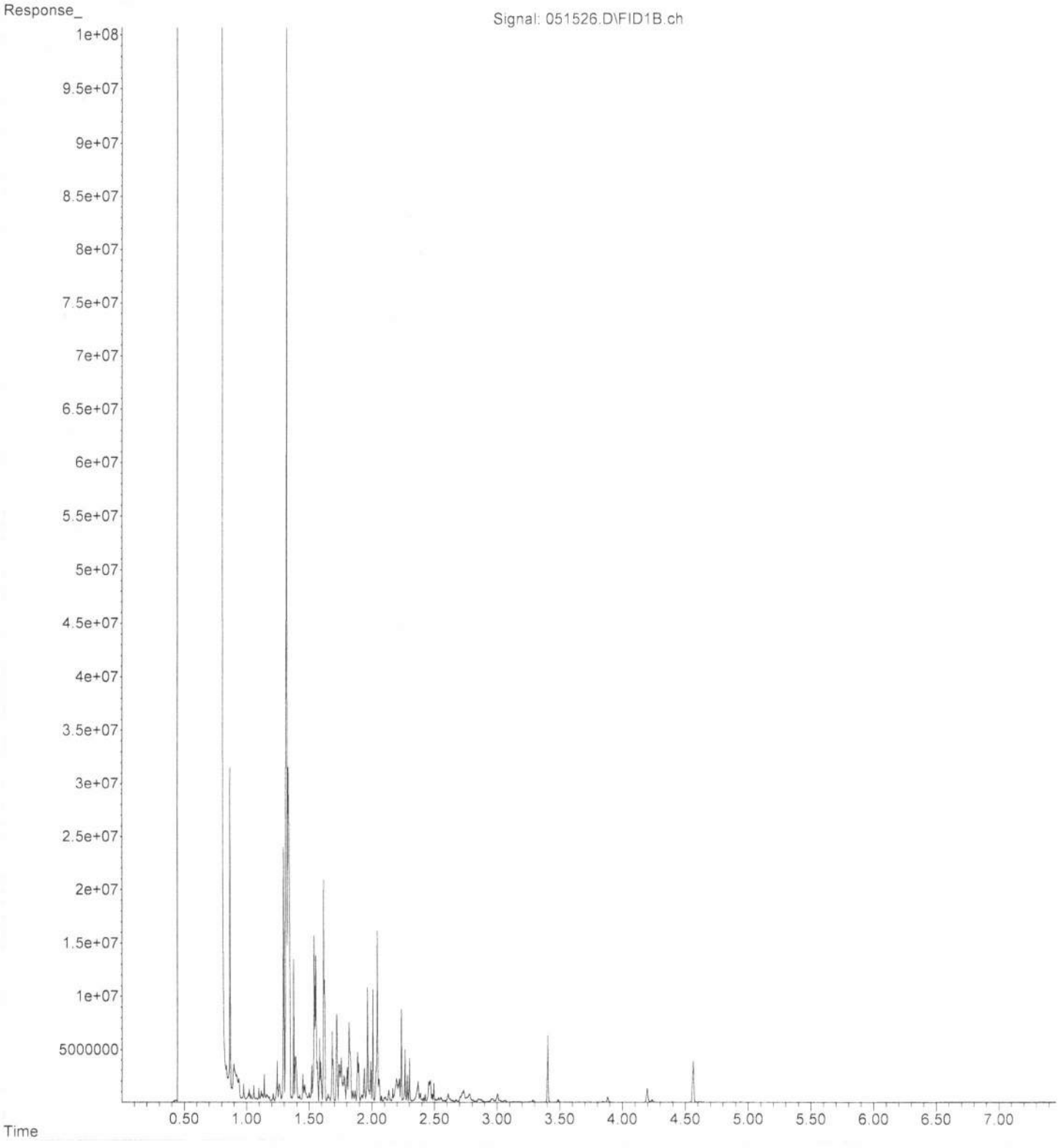
Number of unused TO15 canisters _____ **Number of unused TO17 tubes** _____

File :P:\Proc_GC14\05-15-24\051525.D
Operator : TL
Acquired : 15 May 2024 02:47 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405181-01
Misc Info : ERR
Vial Number: 25

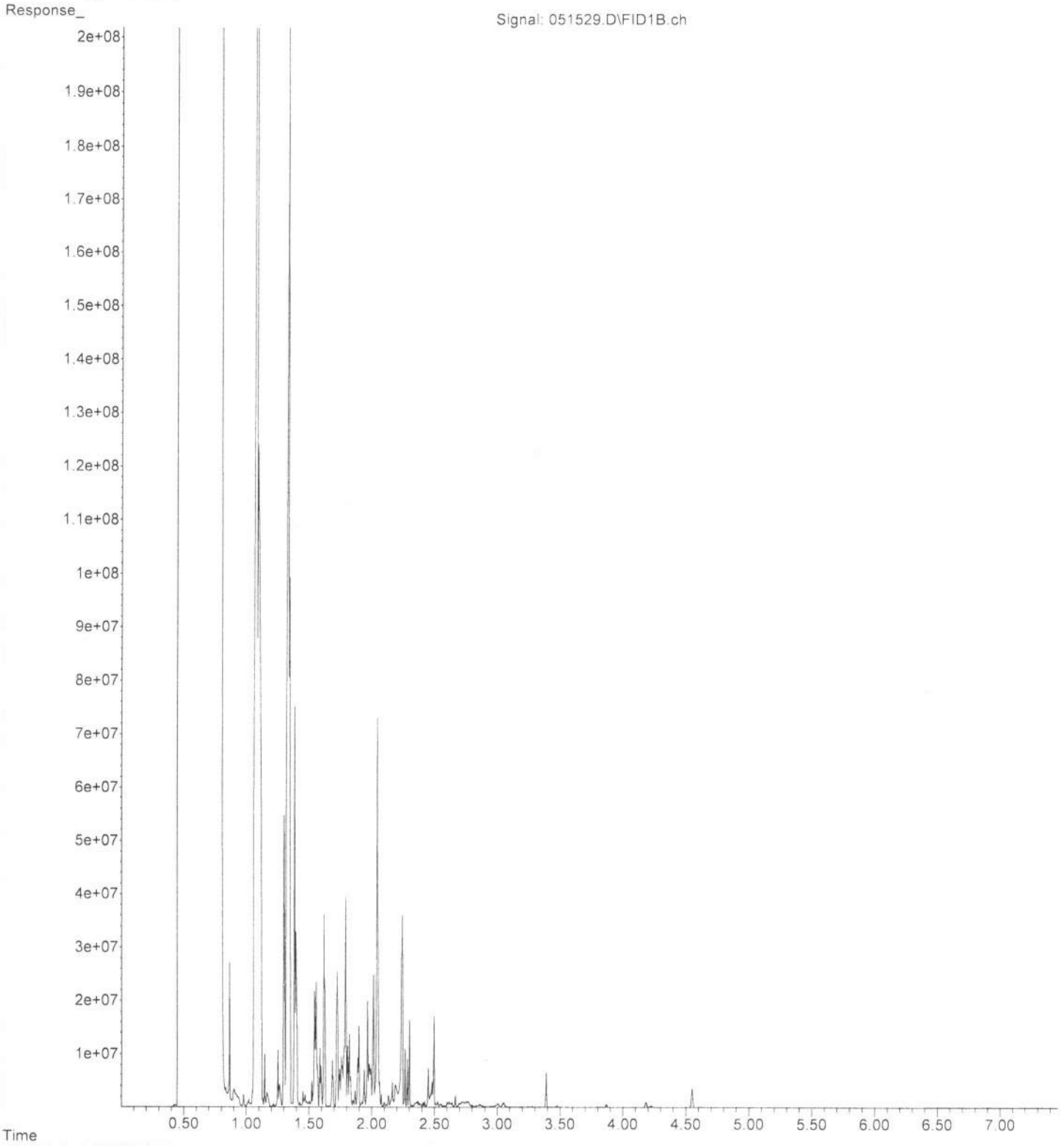


File :P:\Proc_GC14\05-15-24\051526.D
Operator : TL
Acquired : 15 May 2024 02:59 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405181-02
Misc Info :
Vial Number: 26

ERR



File :P:\Proc_GC14\05-15-24\051529.D
Operator : TL
Acquired : 15 May 2024 03:35 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405181-05
Misc Info : ERR
Vial Number: 29



3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 405181, E-191
Work Order Number: 2405200

May 17, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 3 sample(s) on 5/10/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *05/17/2024*

CLIENT: Friedman & Bruya
Project: 405181
Work Order: 2405200

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2405200-001	MW-9D	05/09/2024 10:50 AM	05/10/2024 11:30 AM
2405200-002	MW-22D	05/09/2024 2:40 PM	05/10/2024 11:30 AM
2405200-003	MW-23D	05/09/2024 1:10 PM	05/10/2024 11:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2405200**

Date: **5/17/2024**

CLIENT: Friedman & Bruya

Project: 405181

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2405200**
Date Reported: **5/17/2024**

CLIENT: Friedman & Bruya
Project: 405181

Lab ID: 2405200-001 **Collection Date:** 5/9/2024 10:50:00 AM
Client Sample ID: **MW-9D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	0.00882	0.00500		mg/L	1	5/16/2024 12:29:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:29:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:29:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43868		Analyst: FG
Chloride	28.2	2.00	D	mg/L	10	5/15/2024 8:06:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	5/11/2024 1:43:00 AM
Nitrate (as N)	ND	0.200		mg/L	1	5/11/2024 1:43:00 AM
Sulfate	2.41	1.00		mg/L	1	5/11/2024 1:43:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	10.8	0.700		mg/L	1	5/14/2024 10:53:00 PM
Total Alkalinity by SM 2320B				Batch ID: R91692		Analyst: NR
Alkalinity, Total (As CaCO3)	210	2.50		mg/L	1	5/14/2024 12:01:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 11:47:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.223	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405200**
Date Reported: **5/17/2024**

CLIENT: Friedman & Bruya
Project: 405181

Lab ID: 2405200-002 **Collection Date:** 5/9/2024 2:40:00 PM
Client Sample ID: **MW-22D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	ND	0.00500		mg/L	1	5/16/2024 12:34:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:34:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:34:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43905		Analyst: FG
Chloride	5.37	0.200		mg/L	1	5/14/2024 2:45:00 AM
Nitrite (as N)	ND	0.200		mg/L	1	5/11/2024 2:11:00 AM
Nitrate (as N)	1.02	0.200		mg/L	1	5/11/2024 2:11:00 AM
Sulfate	6.42	1.00		mg/L	1	5/11/2024 2:11:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	1.52	0.700		mg/L	1	5/14/2024 11:24:00 PM
Total Alkalinity by SM 2320B				Batch ID: R91692		Analyst: NR
Alkalinity, Total (As CaCO3)	123	2.50		mg/L	1	5/14/2024 12:01:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 11:52:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	ND	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405200**
Date Reported: **5/17/2024**

CLIENT: Friedman & Bruya
Project: 405181

Lab ID: 2405200-003 **Collection Date:** 5/9/2024 1:10:00 PM
Client Sample ID: **MW-23D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	0.107	0.00500		mg/L	1	5/16/2024 12:37:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:37:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:37:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43868		Analyst: FG
Chloride	27.0	2.00	D	mg/L	10	5/15/2024 11:58:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	5/11/2024 3:33:00 AM
Nitrate (as N)	ND	0.200		mg/L	1	5/11/2024 3:33:00 AM
Sulfate	2.22	1.00		mg/L	1	5/11/2024 3:33:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	10.6	0.700		mg/L	1	5/14/2024 11:55:00 PM
Total Alkalinity by SM 2320B				Batch ID: R91692		Analyst: NR
Alkalinity, Total (As CaCO3)	248	2.50		mg/L	1	5/14/2024 12:01:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 11:57:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.186	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R91692**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91692**		
Client ID: **MBLKW**	Batch ID: **R91692**					Analysis Date: **5/14/2024**		SeqNo: **1912530**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R91692**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91692**		
Client ID: **LCSW**	Batch ID: **R91692**					Analysis Date: **5/14/2024**		SeqNo: **1912531**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	107	2.50	100.0	0	107	89.7	129.7				

Sample ID: **2405160-002ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91692**		
Client ID: **BATCH**	Batch ID: **R91692**					Analysis Date: **5/14/2024**		SeqNo: **1912534**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	131	2.50						127.8	2.19	20	

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-43897**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **MBLKW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912150**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-43897**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **LCSW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912151**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.458	0.150	0.5000	0	91.6	83.7	113.7				

Sample ID: **2405136-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912153**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405136-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912154**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2405136-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912155**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2405202-003DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/14/2024** RunNo: **91676**
Client ID: **BATCH** Batch ID: **43897** Analysis Date: **5/14/2024** SeqNo: **1912168**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405202-003DMS** SampType: **MS** Units: **mg/L** Prep Date: **5/14/2024** RunNo: **91676**
Client ID: **BATCH** Batch ID: **43897** Analysis Date: **5/14/2024** SeqNo: **1912169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Spike recovery indicates a possible matrix effect.

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-43868**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91620**
Client ID: **LCSW**	Batch ID: **43868**		Analysis Date: **5/10/2024**	SeqNo: **1911131**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.737	0.200	0.7500	0	98.3	90	110				
Nitrite (as N)	0.742	0.200	0.7500	0	98.9	90	110				
Nitrate (as N)	0.736	0.200	0.7500	0	98.1	90	110				
Sulfate	3.55	1.00	3.750	0	94.7	90	110				

Sample ID: **MB-43868**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91620**
Client ID: **MBLKW**	Batch ID: **43868**		Analysis Date: **5/10/2024**	SeqNo: **1911133**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2405211-003BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91620**
Client ID: **BATCH**	Batch ID: **43868**		Analysis Date: **5/11/2024**	SeqNo: **1911142**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.6	0.200						18.50	0.275	20	E
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	ND	0.200						0		20	
Sulfate	6.94	1.00						6.912	0.447	20	

Sample ID: **2405211-003BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91620**
Client ID: **BATCH**	Batch ID: **43868**		Analysis Date: **5/11/2024**	SeqNo: **1911143**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.8	0.200	0.7500	18.50	41.1	80	120				ES
Nitrite (as N)	0.736	0.200	0.7500	0	98.1	80	120				
Nitrate (as N)	0.745	0.200	0.7500	0	99.3	80	120				

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2405211-003BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/10/2024**		RunNo: **91620**		
Client ID: **BATCH**	Batch ID: **43868**					Analysis Date: **5/11/2024**		SeqNo: **1911143**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	10.7	1.00	3.750	6.912	102	80	120				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.
S - Spike recovery indicates a possible matrix effect.

Sample ID: **LCS-43905**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91669**		
Client ID: **LCSW**	Batch ID: **43905**					Analysis Date: **5/13/2024**		SeqNo: **1912049**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.729	0.200	0.7500	0	97.2	90	110				

Sample ID: **MB-43905**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91669**		
Client ID: **MBLKW**	Batch ID: **43905**					Analysis Date: **5/13/2024**		SeqNo: **1912051**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									

Sample ID: **2405118-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91669**		
Client ID: **BATCH**	Batch ID: **43905**					Analysis Date: **5/13/2024**		SeqNo: **1912057**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	7.47	0.200						7.474	0	20	E

Sample ID: **2405118-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91669**		
Client ID: **BATCH**	Batch ID: **43905**					Analysis Date: **5/13/2024**		SeqNo: **1912058**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.5	80	120				ES

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2405118-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/13/2024** SeqNo: **1912059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.7	80	120	8.070	0.0248	20	ES

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405200-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **MW-22D** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.36	0.200						5.369	0.0745	20	

Sample ID: **2405200-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **MW-22D** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912069**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6.01	0.200	0.7500	5.369	85.7	80	120				E

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R91640**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **MBLKW**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911464**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R91640**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **LCSW**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911465**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0	94.9	80	120				

Sample ID: **2405116-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **BATCH**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911467**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405116-001AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **BATCH**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911468**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.240	0.0500	0.2000	0.04024	99.9	80	120				

Sample ID: **2405116-001AMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/13/2024**		RunNo: **91640**		
Client ID: **BATCH**	Batch ID: **R91640**					Analysis Date: **5/13/2024**		SeqNo: **1911469**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.247	0.0500	0.2000	0.04024	103	80	120	0.2400	2.72	20	

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2405211-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91640**
Client ID: **BATCH** Batch ID: **R91640** Analysis Date: **5/13/2024** SeqNo: **1911496**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405211-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91640**
Client ID: **BATCH** Batch ID: **R91640** Analysis Date: **5/13/2024** SeqNo: **1911497**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0.01643	86.7	80	120				

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-91680**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MBLKW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912582**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-91680**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **LCSW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912583**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.94	0.700	5.000	0	98.7	90.6	119				

Sample ID: **2405160-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912585**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.46	0.700						1.466	0.616	20	

Sample ID: **2405160-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912586**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.65	0.700	5.000	1.466	104	74.4	117				

Sample ID: **2405160-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912587**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.29	0.700	5.000	1.466	96.5	74.4	117	6.654	5.64	30	

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2405211-001DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91680**
Client ID: **BATCH** Batch ID: **R91680** Analysis Date: **5/15/2024** SeqNo: **1912600**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	2.80	0.700						2.807	0.428	20	

Sample ID: **2405211-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91680**
Client ID: **BATCH** Batch ID: **R91680** Analysis Date: **5/15/2024** SeqNo: **1912601**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.53	0.700	5.000	2.807	94.4	74.4	117				

Work Order: 2405200
CLIENT: Friedman & Bruya
Project: 405181

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R91779** SampType: **LCS** Units: **ppmv** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **LCSW** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914871**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	935	0.00500	1,000	0	93.5	73.6	124				
Ethene	918	0.0100	1,000	0	91.8	76.3	122				
Ethane	936	0.0100	1,000	0	93.6	76.1	123				

Sample ID: **MB-R91779** SampType: **MBLK** Units: **mg/L** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **MBLKW** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914874**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2405200-001AREP** SampType: **REP** Units: **mg/L** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **MW-9D** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914853**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	0.00855	0.00500						0.008822	3.12	30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2405200
Logged by:	Clare Griggs	Date Received:	5/10/2024 11:30:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 2405200

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont	
PROJECT NAME/NO. 405181	PO # E-191
REMARKS EIM and EQuIS 4	

Page # 1 of 1

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: RSK MEE	Sulfide	Alkalinity	Ammonia	TOC	Nitrate	Nitrite	Sulfate	Chloride		Notes
MW-9D		5/9/2024	1050	water		x	x	x	x	x	x	x	x	x		
MW-22D		5/9/2024	1440	water		x	x	x	x	x	x	x	x	x		
MW-23D		5/9/2024	1310	water		x	x	x	x	x	x	x	x	x		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	5/10/24	0930
Received by:		Nathan Koffler	ATC	5/10/24	1130
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

May 22, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on May 9, 2024 from the Whidbey Marine Auto 0204475-001, F&BI 405176 project. There are 50 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA0522R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 9, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine Auto, F&BI 405176 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
405176 -01	MW-2S
405176 -02	MW-12D
405176 -03	MW-21D
405176 -04	MW-8S
405176 -05	MW-6S
405176 -06	MW-17D
405176 -07	FD-01

Samples MW-12D, MW-21D, MW-8S, MW-17D, and FD-01 were sent to Fremont Analytical for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard exceeded the acceptance criteria for acetone. The compound was not detected, therefore this did not represent an out of control condition, and the results are not considered estimates.

The 8270E calibration standard exceeded the acceptance criteria for indeno(1,2,3-cd)pyrene and dibenz(a,h)anthracene for the method blank. The compounds were not detected, therefore this did not represent an out of control condition, and were qualified with a "k" qualifier. The results are not considered estimates.

The dissolved metals sample MW-2S was filtered at Friedman and Bruya. The data were qualified accordingly.

All other quality control requirements were acceptable.

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176
Date Extracted: 05/13/24
Date Analyzed: 05/14/24 and 05/15/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-2S 405176-01	<100	87
MW-12D 405176-02 1/10	53,000	86
MW-21D 405176-03	1,300	89
MW-8S 405176-04	3,200	83
MW-6S 405176-05 1/10	5,300	89
MW-17D 405176-06	3,700	89
FD-01 405176-07	1,200	93
Method Blank 04-889 MB	<100	100

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176
Date Extracted: 05/14/24
Date Analyzed: 05/15/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-2S 405176-01 1/0.8	230 x	<200	99
MW-12D 405176-02	4,200 x	<250	99
MW-21D 405176-03	350 x	<250	107
MW-8S 405176-04 1/1.2	720 x	<300	107
MW-6S 405176-05 1/1.2	1,100 x	<300	107
MW-17D 405176-06	430 x	<250	108
FD-01 405176-07	340 x	<250	103
Method Blank 04-1154 MB	<50	<250	102

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-01
Date Analyzed:	05/15/24	Data File:	051521.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	102	84	115
4-Bromofluorobenzene	96	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-02 1/50
Date Analyzed:	05/15/24	Data File:	051529.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	16 j
Vinyl chloride	<1	Dibromochloromethane	<25
Bromomethane	<250	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	1,900
Acetone	<2,500 k	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	7,100
Hexane	<250	o-Xylene	2,500
Methylene chloride	<250	Styrene	<50
Methyl t-butyl ether (MTBE)	<50	Isopropylbenzene	61
trans-1,2-Dichloroethene	<50	Bromoform	<250
1,1-Dichloroethane	<50	n-Propylbenzene	180
2,2-Dichloropropane	<50	Bromobenzene	<50
cis-1,2-Dichloroethene	<50	1,3,5-Trimethylbenzene	550
Chloroform	<50	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<50
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<50
1,1,1-Trichloroethane	<50	4-Chlorotoluene	<50
1,1-Dichloropropene	<50	tert-Butylbenzene	<50
Carbon tetrachloride	<25	1,2,4-Trimethylbenzene	2,100
Benzene	<5 j	sec-Butylbenzene	<50
Trichloroethene	<5 j	p-Isopropyltoluene	<50
1,2-Dichloropropane	<50	1,3-Dichlorobenzene	<50
Bromodichloromethane	<25	1,4-Dichlorobenzene	<50
Dibromomethane	<50	1,2-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dibromo-3-chloropropane	<500
cis-1,3-Dichloropropene	<20	1,2,4-Trichlorobenzene	<50
Toluene	3,300	Hexachlorobutadiene	<25
trans-1,3-Dichloropropene	<20	Naphthalene	700
1,1,2-Trichloroethane	<25	1,2,3-Trichlorobenzene	<50
2-Hexanone	<500		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-03
Date Analyzed:	05/15/24	Data File:	051522.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	93	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	51
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	19
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	73
Hexane	<5	o-Xylene	28
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	2.3
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	6.2
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	25
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	70
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	20
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-04
Date Analyzed:	05/15/24	Data File:	051524.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	86	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	36	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	35
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	41
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	110
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	190
Benzene	<0.35	sec-Butylbenzene	5.2
Trichloroethene	<0.5	p-Isopropyltoluene	2.7
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	10
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-05 1/10
Date Analyzed:	05/15/24	Data File:	051526.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	98	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<5 j
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	140
Acetone	<500 k	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	180
Hexane	<50	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	21
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	36
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	95
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	280
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<5	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	130
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-06 1/10
Date Analyzed:	05/15/24	Data File:	051527.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	78	126
Toluene-d8	103	84	115
4-Bromofluorobenzene	92	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<5 j
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	230
Acetone	<500 k	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	480
Hexane	<50	o-Xylene	38
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	20
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	36
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	160
Benzene	42	sec-Butylbenzene	<10
Trichloroethene	10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	81	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	65
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-07
Date Analyzed:	05/15/24	Data File:	051523.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	94	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	50
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	18
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	68
Hexane	<5	o-Xylene	26
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	2.1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	5.7
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	23
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	63
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	19
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	04-1086 mb
Date Analyzed:	05/15/24	Data File:	051509.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	78	126
Toluene-d8	103	84	115
4-Bromofluorobenzene	92	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.2 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.1 j	sec-Butylbenzene	<1
Trichloroethene	<0.1 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-01
Date Analyzed:	05/15/24	Data File:	051518.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	80	10	142
Terphenyl-d14	94	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.31
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	0.22
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.063
Anthracene	0.022
Fluoranthene	0.041
Pyrene	0.029
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-02
Date Analyzed:	05/15/24	Data File:	051519.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	88	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	340 ve
2-Methylnaphthalene	63
1-Methylnaphthalene	35
Acenaphthylene	<0.02
Acenaphthene	0.040
Fluorene	0.10
Phenanthrene	0.11
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-02 1/50
Date Analyzed:	05/16/24	Data File:	051611.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75 d	15	144
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	170 d	10	142
Terphenyl-d14	85 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	350

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-03
Date Analyzed:	05/15/24	Data File:	051520.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	77	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	83	10	142
Terphenyl-d14	97	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-04
Date Analyzed:	05/15/24	Data File:	051521.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	87	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	7.3
2-Methylnaphthalene	17
1-Methylnaphthalene	22
Acenaphthylene	<0.02
Acenaphthene	0.082
Fluorene	0.082
Phenanthrene	0.048
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-05
Date Analyzed:	05/15/24	Data File:	051522.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	73	15	144
2-Fluorobiphenyl	67	25	128
2,4,6-Tribromophenol	80	10	142
Terphenyl-d14	91	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	11
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	2.9
Acenaphthylene	<0.02
Acenaphthene	0.028
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-06
Date Analyzed:	05/15/24	Data File:	051523.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	15	144
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	82	10	142
Terphenyl-d14	98	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	48
2-Methylnaphthalene	13
1-Methylnaphthalene	6.4
Acenaphthylene	<0.02
Acenaphthene	0.029
Fluorene	0.022
Phenanthrene	0.023
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	405176-07
Date Analyzed:	05/16/24	Data File:	051609.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	75	10	142
Terphenyl-d14	103	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.47
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine Auto
Date Extracted:	05/15/24	Lab ID:	04-1165 mb2
Date Analyzed:	05/15/24	Data File:	051516.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	74	10	140
Terphenyl-d14	89	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02 k
Dibenz(a,h)anthracene	<0.02 k
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-01
Date Analyzed:	05/14/24	Data File:	405176-01.145
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.5
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-02
Date Analyzed:	05/11/24	Data File:	405176-02.236
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	31
Lead	1.5

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-03
Date Analyzed:	05/14/24	Data File:	405176-03.155
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.9
Lead	2.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-04
Date Analyzed:	05/14/24	Data File:	405176-04.156
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.7
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-05
Date Analyzed:	05/14/24	Data File:	405176-05.157
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-06
Date Analyzed:	05/11/24	Data File:	405176-06.240
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	28
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-07
Date Analyzed:	05/14/24	Data File:	405176-07.166
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.5
Lead	2.6

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	I4-383 mb
Date Analyzed:	05/10/24	Data File:	I4-383 mb.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-2S f	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	405176-01
Date Analyzed:	05/13/24	Data File:	405176-01.087
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.3
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-02
Date Analyzed:	05/10/24	Data File:	405176-02.189
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-02 x10
Date Analyzed:	05/14/24	Data File:	405176-02 x10.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	29
Manganese	3,900

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-03
Date Analyzed:	05/14/24	Data File:	405176-03.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.7
Lead	2.2
Manganese	83

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-04
Date Analyzed:	05/14/24	Data File:	405176-04.134
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.3
Lead	<1
Manganese	440

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-6S	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-05
Date Analyzed:	05/14/24	Data File:	405176-05.142
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.3
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-06
Date Analyzed:	05/11/24	Data File:	405176-06.229
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-06 x10
Date Analyzed:	05/14/24	Data File:	405176-06 x10.143
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	28
Manganese	3,400

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01	Client:	Haley & Aldrich, Inc
Date Received:	05/09/24	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	405176-07
Date Analyzed:	05/14/24	Data File:	405176-07.144
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.7
Lead	2.2
Manganese	80

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine Auto
Date Extracted:	05/13/24	Lab ID:	I4-389 mb
Date Analyzed:	05/13/24	Data File:	I4-389 mb.072
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine Auto
Date Extracted:	05/10/24	Lab ID:	I4-382 mb
Date Analyzed:	05/14/24	Data File:	I4-382 mb.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176
Date Extracted: 05/13/24
Date Analyzed: 05/14/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-2S 405176-01	65
MW-12D 405176 -02	9.2
MW-21D 405176 -03	5.6
MW-8S 405176 -04	<5
MW-6S 405176 -05	<5
MW-17D 405176 -06	18
FD-01 405176 -07	6.4
Method Blank I4-0395 MB	<5

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 405191-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	92	92	65-151	0

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 405176-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	84	30-221
Chloromethane	ug/L (ppb)	10	<10	90	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	93	50-150
Bromomethane	ug/L (ppb)	10	<5	98	50-150
Chloroethane	ug/L (ppb)	10	<1	105	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	103	50-150
Acetone	ug/L (ppb)	50	<50	65	18-161
1,1-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
Hexane	ug/L (ppb)	10	<5	92	50-150
Methylene chloride	ug/L (ppb)	10	<5	90	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	96	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	93	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	89	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	98	43-171
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	98	10-211
Chloroform	ug/L (ppb)	10	<1	94	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	78	10-192
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	94	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	105	50-150
Benzene	ug/L (ppb)	10	<0.35	94	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	96	35-149
1,2-Dichloropropane	ug/L (ppb)	10	<1	84	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	94	50-150
Dibromomethane	ug/L (ppb)	10	<1	96	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	112	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	86	50-150
Toluene	ug/L (ppb)	10	<1	96	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	92	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	89	50-150
2-Hexanone	ug/L (ppb)	50	<10	89	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	89	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	107	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	98	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	99	50-150
Chlorobenzene	ug/L (ppb)	10	<1	93	50-150
Ethylbenzene	ug/L (ppb)	10	<1	99	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	50-150
m,p-Xylene	ug/L (ppb)	20	<2	100	50-150
o-Xylene	ug/L (ppb)	10	<1	98	50-150
Styrene	ug/L (ppb)	10	<1	96	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	97	50-150
Bromoform	ug/L (ppb)	10	<5	103	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	91	50-150
Bromobenzene	ug/L (ppb)	10	<1	100	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	94	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	95	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	92	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	91	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	91	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	91	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	92	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	96	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	89	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	92	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	99	50-150
Naphthalene	ug/L (ppb)	10	<1	89	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	96	50-150

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	102	98	46-206	4
Chloromethane	ug/L (ppb)	10	89	82	59-132	8
Vinyl chloride	ug/L (ppb)	10	90	89	64-142	1
Bromomethane	ug/L (ppb)	10	86	100	50-197	15
Chloroethane	ug/L (ppb)	10	99	98	70-130	1
Trichlorofluoromethane	ug/L (ppb)	10	98	99	51-159	1
Acetone	ug/L (ppb)	50	65	65	10-140	0
1,1-Dichloroethene	ug/L (ppb)	10	93	91	64-140	2
Hexane	ug/L (ppb)	10	92	90	54-136	2
Methylene chloride	ug/L (ppb)	10	95	86	43-134	10
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	93	92	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	94	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	88	87	70-130	1
2,2-Dichloropropane	ug/L (ppb)	10	103	104	64-148	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	92	70-130	1
Chloroform	ug/L (ppb)	10	94	91	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	78	76	47-112	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	95	70-130	1
1,1,1-Trichloroethane	ug/L (ppb)	10	100	99	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	91	88	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	102	102	70-130	0
Benzene	ug/L (ppb)	10	93	91	70-130	2
Trichloroethene	ug/L (ppb)	10	92	92	70-130	0
1,2-Dichloropropane	ug/L (ppb)	10	84	81	70-130	4
Bromodichloromethane	ug/L (ppb)	10	96	93	70-130	3
Dibromomethane	ug/L (ppb)	10	96	94	70-130	2
4-Methyl-2-pentanone	ug/L (ppb)	50	102	101	68-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	88	91	69-131	3
Toluene	ug/L (ppb)	10	94	94	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	94	92	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	88	88	70-130	0
2-Hexanone	ug/L (ppb)	50	85	84	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	86	90	70-130	5
Tetrachloroethene	ug/L (ppb)	10	106	106	70-130	0
Dibromochloromethane	ug/L (ppb)	10	95	93	60-148	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	98	70-130	0
Chlorobenzene	ug/L (ppb)	10	92	90	70-130	2
Ethylbenzene	ug/L (ppb)	10	97	97	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	98	101	70-130	3
m,p-Xylene	ug/L (ppb)	20	98	97	70-130	1
o-Xylene	ug/L (ppb)	10	96	96	70-130	0
Styrene	ug/L (ppb)	10	95	92	70-130	3
Isopropylbenzene	ug/L (ppb)	10	95	96	70-130	1
Bromoform	ug/L (ppb)	10	100	97	69-138	3
n-Propylbenzene	ug/L (ppb)	10	91	87	70-130	4
Bromobenzene	ug/L (ppb)	10	100	98	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	93	88	70-130	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	94	98	70-130	4
1,2,3-Trichloropropane	ug/L (ppb)	10	90	89	70-130	1
2-Chlorotoluene	ug/L (ppb)	10	90	87	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	91	90	70-130	1
tert-Butylbenzene	ug/L (ppb)	10	92	90	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	91	89	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	94	90	70-130	4
p-Isopropyltoluene	ug/L (ppb)	10	95	93	70-130	2
1,3-Dichlorobenzene	ug/L (ppb)	10	98	96	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	97	94	70-130	3
1,2-Dichlorobenzene	ug/L (ppb)	10	94	94	70-130	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	89	89	70-130	0
1,2,4-Trichlorobenzene	ug/L (ppb)	10	94	92	70-130	2
Hexachlorobutadiene	ug/L (ppb)	10	100	94	70-130	6
Naphthalene	ug/L (ppb)	10	86	85	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	95	92	70-130	3

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	65	71	58-93	9
2-Methylnaphthalene	ug/L (ppb)	10	64	70	63-97	9
1-Methylnaphthalene	ug/L (ppb)	10	66	70	62-99	6
Acenaphthylene	ug/L (ppb)	10	81	83	68-111	2
Acenaphthene	ug/L (ppb)	10	78	81	67-104	4
Fluorene	ug/L (ppb)	10	79	82	70-130	4
Phenanthrene	ug/L (ppb)	10	83	84	70-130	1
Anthracene	ug/L (ppb)	10	86	86	70-130	0
Fluoranthene	ug/L (ppb)	10	92	95	70-130	3
Pyrene	ug/L (ppb)	10	90	89	70-130	1
Benz(a)anthracene	ug/L (ppb)	10	91	93	70-130	2
Chrysene	ug/L (ppb)	10	93	95	70-130	2
Benzo(a)pyrene	ug/L (ppb)	10	97	99	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	10	99	100	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	10	96	96	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	96	100	70-130	4
Dibenz(a,h)anthracene	ug/L (ppb)	10	95	100	70-130	5
Benzo(g,h,i)perylene	ug/L (ppb)	10	94	97	68-131	3

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 405176-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.48	94 b	93 b	75-125	1 b
Lead	ug/L (ppb)	10	<1	94	97	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	87	80-120
Lead	ug/L (ppb)	10	92	80-120

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 405124-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	90	92	75-125	2
Lead	ug/L (ppb)	10	<1	96	97	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	89	80-120
Lead	ug/L (ppb)	10	99	80-120

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 405176-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	26.8	56 b	64 b	75-125	13 b
Lead	ug/L (ppb)	10	<1	88	85	75-125	3
Manganese	ug/L (ppb)	20	3,290	0 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	90	80-120
Lead	ug/L (ppb)	10	107	80-120
Manganese	ug/L (ppb)	20	102	80-120

Date of Report: 05/22/24
Date Received: 05/09/24
Project: Whidbey Marine Auto, F&BI 405176

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 405142-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	Mg/L (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	102	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

405176

SAMPLE CHAIN OF CUSTODY 05/09/24 K5/F3/VW2

Page # 1 of 1

Report To Heather Good
Company Haley & Aldrich
Address
City, State, ZIP
Phone Email Hgood@haleyaldrich.com

SAMPLERS (signature) [signature]
PROJECT NAME Whidbey Marine auto
PO #
REMARKS
INVOICE TO
Project specific RLs? - Yes / No

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	MEE (~~BTEX EPA 8021~~)	sulfide (~~NWTPH-HCID~~)	VOCs EPA 8260	PAHs EPA 8270	Anions & Alkalinity (~~PCBs EPA 8082~~)	As&Pb total & dissolved	TSS	dissolved Mn	Ammonia & TOC	Notes
MW-2S	01 A-J	5/8/24	1410	W	10	X	X			X	X		X	X			short hold
MW-12D	02 A-Q	5/8/24	1410	W	17			X	X			X			X	X	time for anions
MW-21D	03 ↓	5/8/24	1040	W	17			X	X			X			X	X	
~~MW-19D~~ (2S)		~~" "~~	~~1420~~	~~W~~				~~X~~									MW-2S is
MW-8S	04 A-Q	" "	1035	W	17			X	X			X			X	X	missing dissolved
MW-6S	05 A-K	" "	1215	W	11												metals bottle. PAH bottle is low
MW-17D	06 A-Q	" "	1650	W	17			X	X			X			X	X	
FD-01	07 ↓	5/8/24	1200	W	17	↓	↓	X	X	↓	↓	X	↓	↓	X	X	

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Zach Stephens	H&A	5/9/24	0715
Received by: [signature]	VINH	FBI	5-9-24	15:30
Relinquished by:		Samples received at 4 °C		
Received by:				

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 405176 CLIENT HCA INITIALS/DATE: RR 5-9-24

If custody seals are present on cooler, are they intact? ☐ NA ☑ YES ☐ NO

Cooler/Sample temperature 4 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☐ YES ☑ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☑ Yes ☐ No	
Date Sampled	☐ Yes ☑ No	Sample ID 02A, 02B do not have date ☑ Not on COC/label
Time Sampled	☑ Yes ☐ No	or ☐ Not on COC/label
# of Containers	☑ Yes ☐ No	☐ Not on COC/label
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

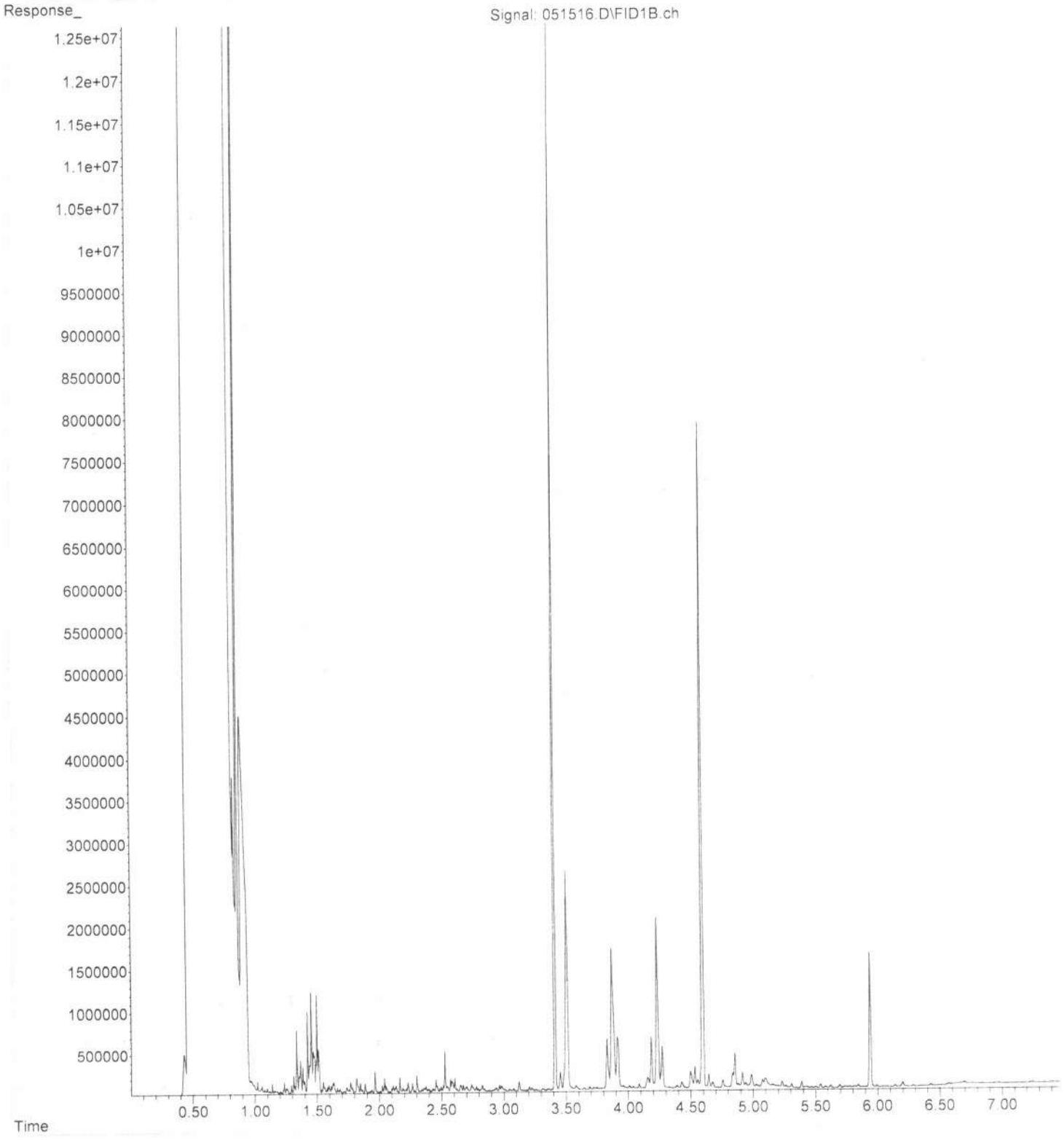
Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☑ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ **Number of unused TO17 tubes** _____

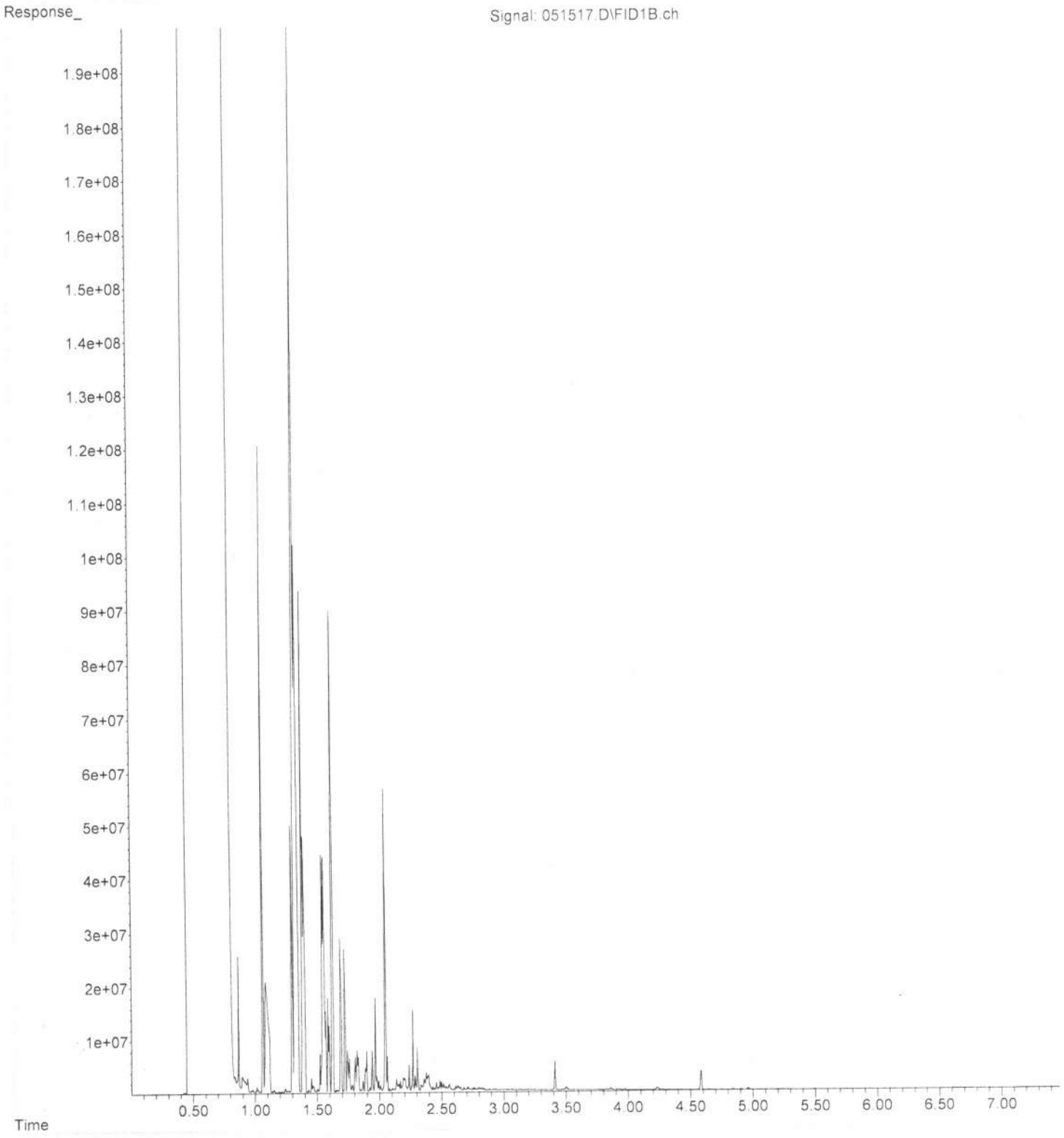
File : P:\Proc_GC14\05-15-24\051516.D
Operator : TL
Acquired : 15 May 2024 01:00 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-01
Misc Info :
Vial Number: 18

ERR



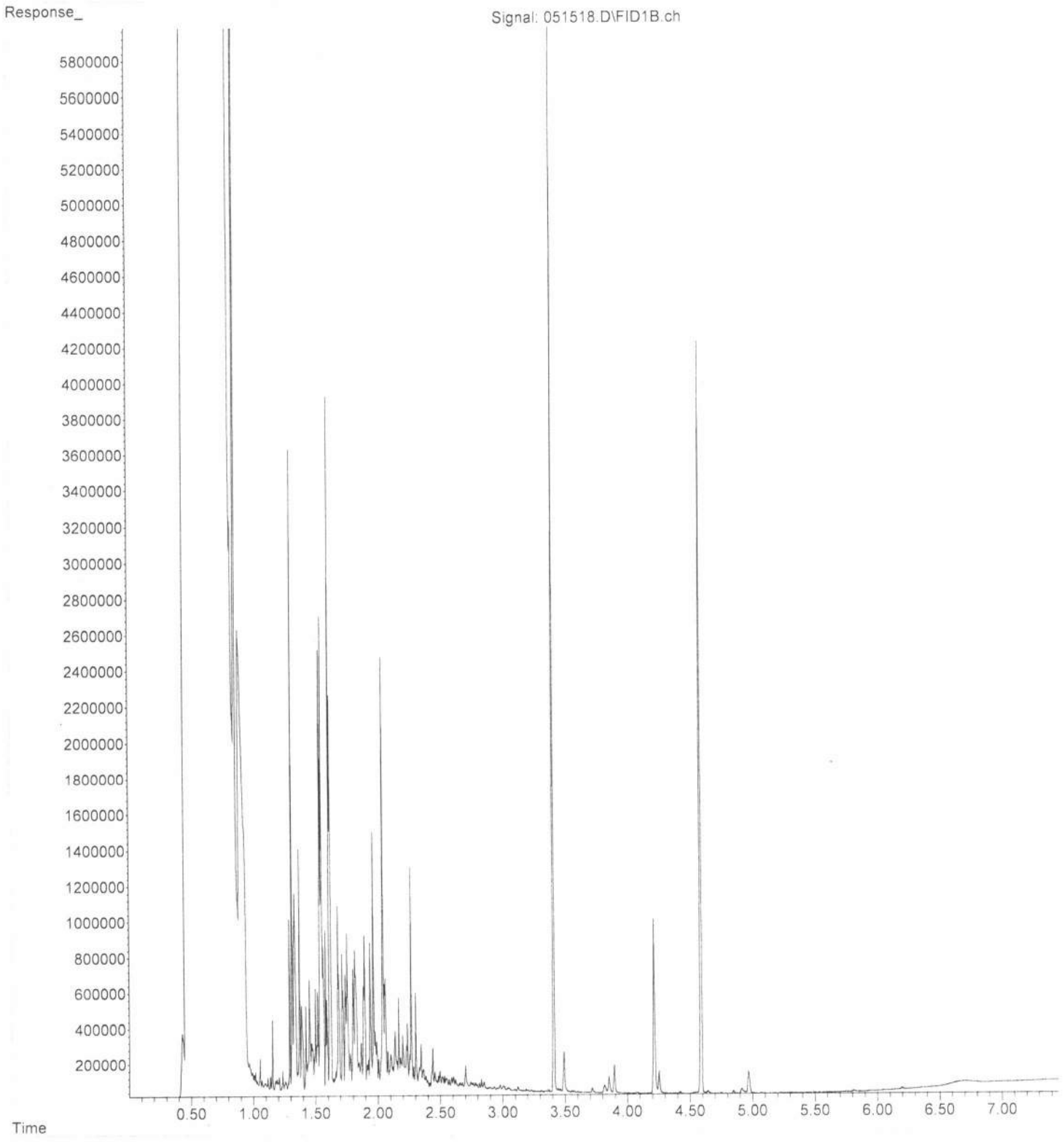
File : P:\Proc_GC14\05-15-24\051517.D
Operator : TL
Acquired : 15 May 2024 01:12 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-02
Misc Info :
Vial Number: 19

ERR



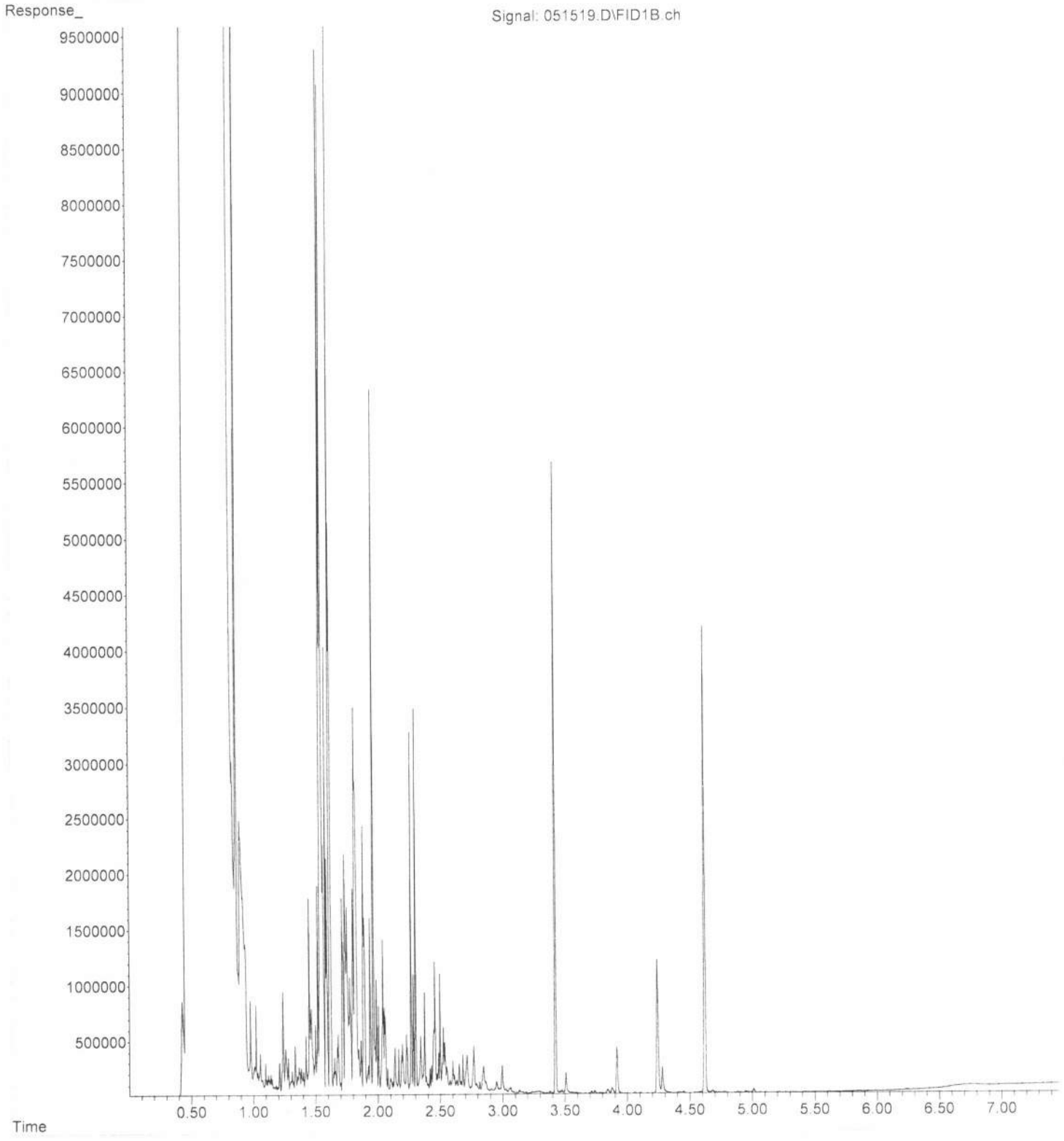
File :P:\Proc_GC14\05-15-24\051518.D
Operator : TL
Acquired : 15 May 2024 01:23 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-03
Misc Info :
Vial Number: 20

ERR



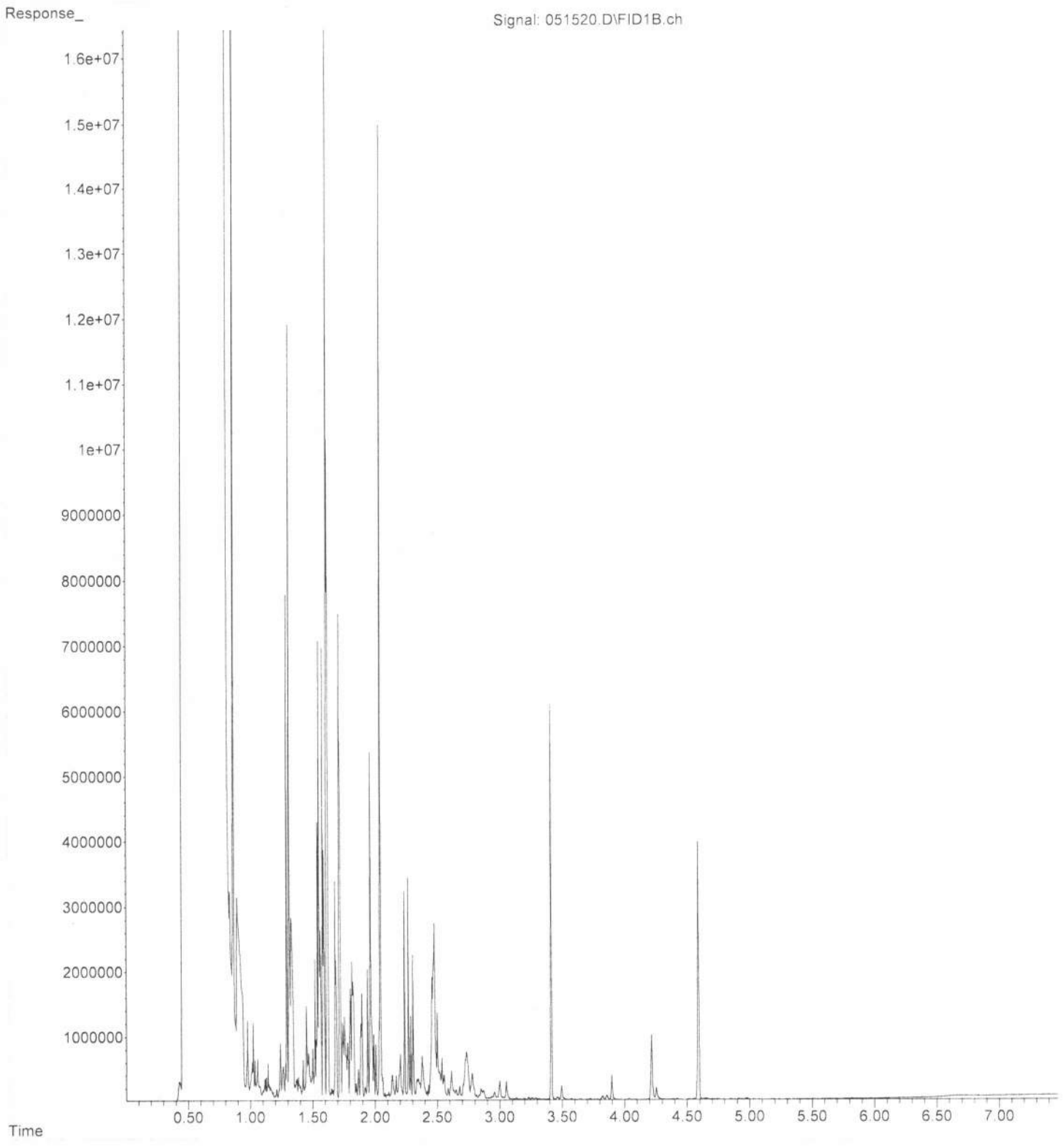
File :P:\Proc_GC14\05-15-24\051519.D
Operator : TL
Acquired : 15 May 2024 01:35 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-04
Misc Info :
Vial Number: 21

ERR



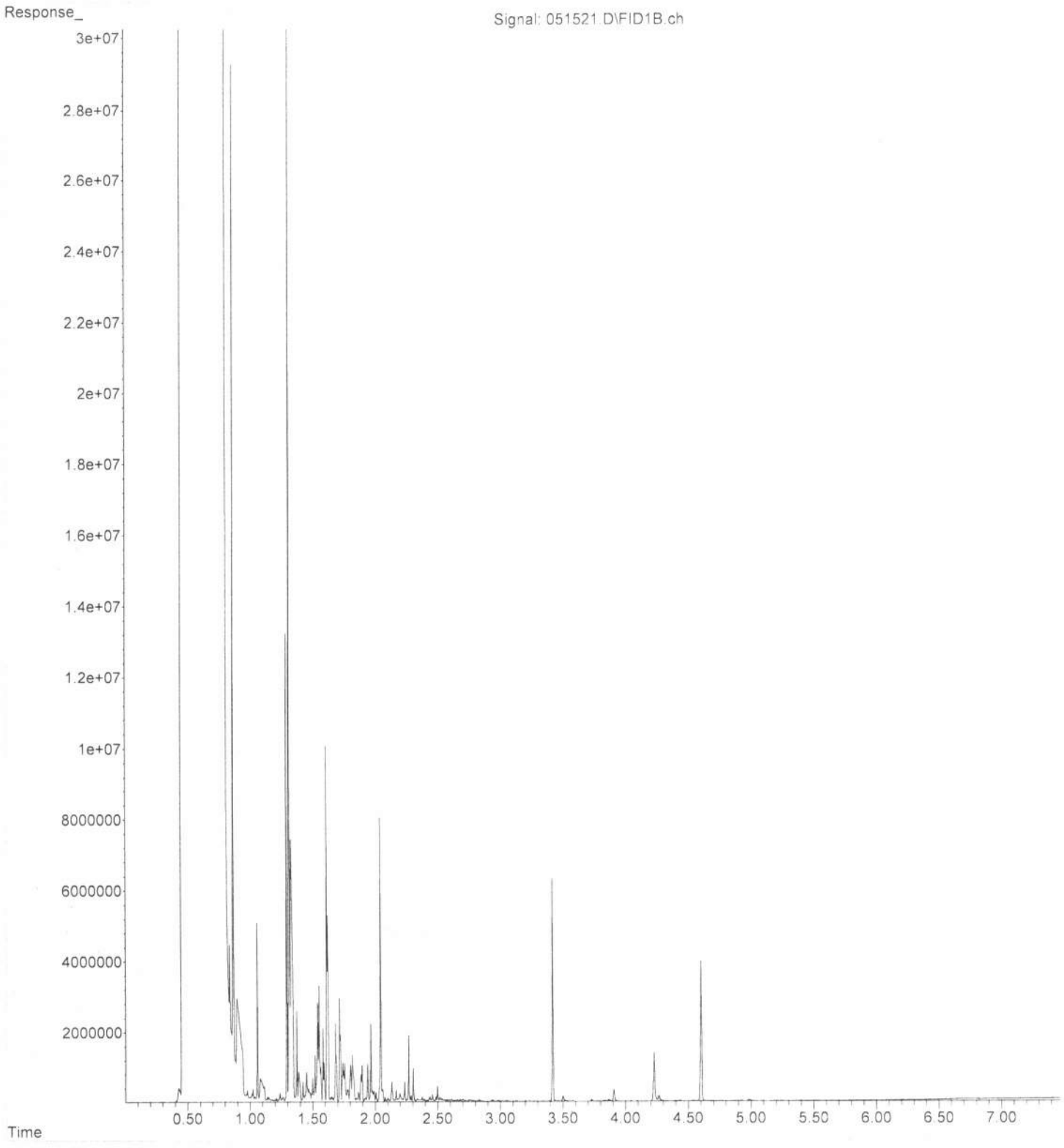
File :P:\Proc_GC14\05-15-24\051520.D
Operator : TL
Acquired : 15 May 2024 01:47 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-05
Misc Info :
Vial Number: 22

ERR

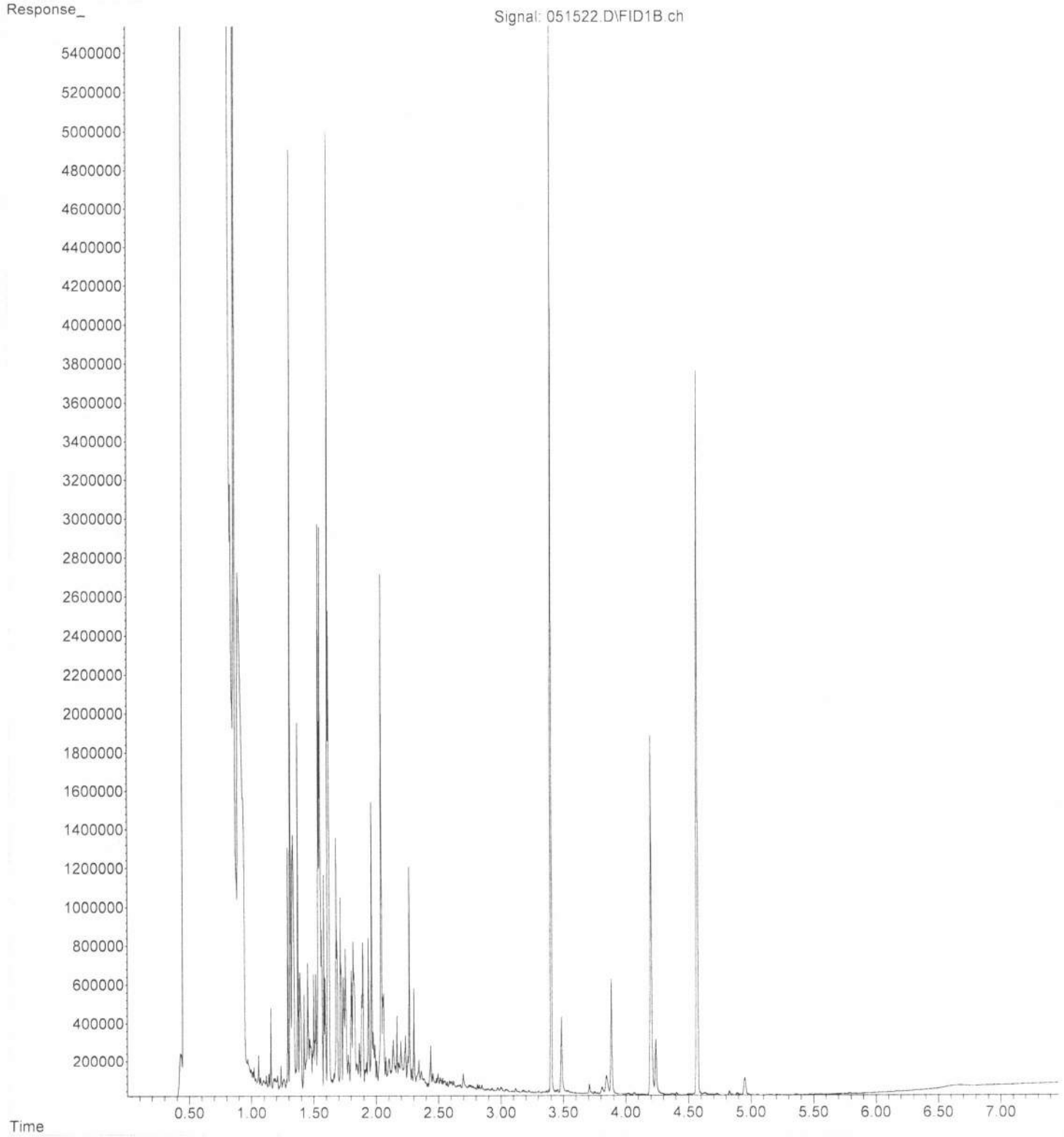


File :P:\Proc_GC14\05-15-24\051521.D
Operator : TL
Acquired : 15 May 2024 01:59 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-06
Misc Info :
Vial Number: 23

ERR



File :P:\Proc_GC14\05-15-24\051522.D
Operator : TL
Acquired : 15 May 2024 02:11 pm using AcqMethod DX.M
Instrument : GC14
Sample Name: 405176-07
Misc Info : ERR
Vial Number: 24



3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 405176, E-188
Work Order Number: 2405202

May 20, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 5 sample(s) on 5/10/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by SM 2320B
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *05/20/2024*

CLIENT: Friedman & Bruya
Project: 405176
Work Order: 2405202

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2405202-001	MW-12D	05/08/2024 2:10 PM	05/10/2024 11:30 AM
2405202-002	MW-21D	05/08/2024 10:40 AM	05/10/2024 11:30 AM
2405202-003	MW-8S	05/08/2024 10:35 AM	05/10/2024 11:30 AM
2405202-004	MW-17D	05/08/2024 4:50 PM	05/10/2024 11:30 AM
2405202-005	FD-01	05/08/2024 12:00 PM	05/10/2024 11:30 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2405202**

Date: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2405202**
Date Reported: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

Lab ID: 2405202-001 **Collection Date:** 5/8/2024 2:10:00 PM
Client Sample ID: **MW-12D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	0.00686	0.00500		mg/L	1	5/16/2024 12:39:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:39:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:39:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43960		Analyst: SS
Chloride	11.2	2.00	D	mg/L	10	5/17/2024 6:28:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	5/10/2024 1:39:00 PM
Nitrate (as N)	ND	0.200		mg/L	1	5/10/2024 1:39:00 PM
Sulfate	1.80	1.00		mg/L	1	5/10/2024 9:58:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	12.5	0.700		mg/L	1	5/15/2024 12:26:00 AM
Total Alkalinity by SM 2320B				Batch ID: R91785		Analyst: NR
Alkalinity, Total (As CaCO3)	262	2.50		mg/L	1	5/15/2024 4:40:20 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 12:51:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.135	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405202**
Date Reported: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

Lab ID: 2405202-002 **Collection Date:** 5/8/2024 10:40:00 AM
Client Sample ID: **MW-21D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	ND	0.00500		mg/L	1	5/16/2024 12:42:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:42:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:42:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43868		Analyst: FG
Chloride	58.3	2.00	D	mg/L	10	5/15/2024 8:52:00 PM
Nitrite (as N)	ND	0.200	H	mg/L	1	5/11/2024 4:01:00 AM
Nitrate (as N)	1.52	0.200	H	mg/L	1	5/11/2024 4:01:00 AM
Sulfate	7.55	1.00		mg/L	1	5/11/2024 4:01:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	2.06	0.700		mg/L	1	5/15/2024 12:47:00 AM
Total Alkalinity by SM 2320B				Batch ID: R91785		Analyst: NR
Alkalinity, Total (As CaCO3)	127	2.50		mg/L	1	5/15/2024 4:40:20 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 12:55:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.0720	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405202**
Date Reported: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

Lab ID: 2405202-003 **Collection Date:** 5/8/2024 10:35:00 AM
Client Sample ID: **MW-8S** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	ND	0.00500		mg/L	1	5/16/2024 12:46:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:46:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:46:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43905		Analyst: FG
Chloride	23.0	2.00	D	mg/L	10	5/14/2024 4:18:00 AM
Nitrite (as N)	ND	0.200	H	mg/L	1	5/11/2024 4:30:00 AM
Nitrate (as N)	3.96	2.00	DH	mg/L	10	5/14/2024 4:18:00 AM
Sulfate	14.6	10.0	D	mg/L	10	5/14/2024 4:18:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	2.62	0.700		mg/L	1	5/15/2024 2:06:00 AM
Total Alkalinity by SM 2320B				Batch ID: R91785		Analyst: NR
Alkalinity, Total (As CaCO3)	169	2.50		mg/L	1	5/15/2024 4:40:20 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 1:00:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.0865	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405202**
Date Reported: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

Lab ID: 2405202-004 **Collection Date:** 5/8/2024 4:50:00 PM
Client Sample ID: **MW-17D** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	0.505	0.0200	D	mg/L	4	5/16/2024 1:20:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:48:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:48:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43960		Analyst: SS
Chloride	22.9	2.00	D	mg/L	10	5/17/2024 6:51:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	5/10/2024 1:11:00 PM
Nitrate (as N)	ND	0.200		mg/L	1	5/10/2024 1:11:00 PM
Sulfate	11.8	1.00		mg/L	1	5/10/2024 10:27:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	1.58	0.700		mg/L	1	5/15/2024 2:36:00 AM
Total Alkalinity by SM 2320B				Batch ID: R91785		Analyst: NR
Alkalinity, Total (As CaCO3)	192	2.50		mg/L	1	5/15/2024 4:40:20 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 1:15:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.0574	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Analytical Report

Work Order: **2405202**
Date Reported: **5/20/2024**

CLIENT: Friedman & Bruya
Project: 405176

Lab ID: 2405202-005 **Collection Date:** 5/8/2024 12:00:00 PM
Client Sample ID: **FD-01** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R91779		Analyst: LB
Methane	0.00601	0.00500		mg/L	1	5/16/2024 12:52:00 PM
Ethene	ND	0.0100		mg/L	1	5/16/2024 12:52:00 PM
Ethane	ND	0.0100		mg/L	1	5/16/2024 12:52:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 43868		Analyst: FG
Chloride	55.7	2.00	D	mg/L	10	5/15/2024 9:16:00 PM
Nitrite (as N)	ND	0.200	H	mg/L	1	5/11/2024 4:58:00 AM
Nitrate (as N)	1.52	0.200	H	mg/L	1	5/11/2024 4:58:00 AM
Sulfate	7.68	1.00		mg/L	1	5/11/2024 4:58:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R91680		Analyst: FG
Total Organic Carbon	1.88	0.700		mg/L	1	5/15/2024 3:07:00 AM
Total Alkalinity by SM 2320B				Batch ID: R91785		Analyst: NR
Alkalinity, Total (As CaCO3)	127	2.50		mg/L	1	5/15/2024 4:40:20 PM
Ammonia by SM 4500 NH3G				Batch ID: 43897		Analyst: SS
Nitrogen, Ammonia	ND	0.150		mg/L	1	5/14/2024 1:20:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R91640		Analyst: SS
Sulfide	0.0641	0.0500		mg/L	1	5/13/2024 3:46:48 PM

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R91785** SampType: **MBLK** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91785**
Client ID: **MBLKW** Batch ID: **R91785** Analysis Date: **5/15/2024** SeqNo: **1914967**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R91785** SampType: **LCS** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91785**
Client ID: **LCSW** Batch ID: **R91785** Analysis Date: **5/15/2024** SeqNo: **1914968**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	108	2.50	100.0	0	108	89.7	129.7				

Sample ID: **2405211-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91785**
Client ID: **BATCH** Batch ID: **R91785** Analysis Date: **5/15/2024** SeqNo: **1914970**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	102	2.50						101.8	0.409	20	

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-43897**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **MBLKW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912150**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-43897**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **LCSW**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912151**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.458	0.150	0.5000	0	91.6	83.7	113.7				

Sample ID: **2405136-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912153**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405136-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912154**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2405136-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/14/2024**	RunNo: **91676**
Client ID: **BATCH**	Batch ID: **43897**		Analysis Date: **5/14/2024**	SeqNo: **1912155**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150	0		30	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **2405202-003DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/14/2024** RunNo: **91676**
Client ID: **MW-8S** Batch ID: **43897** Analysis Date: **5/14/2024** SeqNo: **1912168**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2405202-003DMS** SampType: **MS** Units: **mg/L** Prep Date: **5/14/2024** RunNo: **91676**
Client ID: **MW-8S** Batch ID: **43897** Analysis Date: **5/14/2024** SeqNo: **1912169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	12.2	150				S

NOTES:
S - Spike recovery indicates a possible matrix effect.

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-43867**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91768**
Client ID: **MBLKW**	Batch ID: **43867**		Analysis Date: **5/10/2024**	SeqNo: **1914552**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									

Sample ID: **2405202-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91768**
Client ID: **MW-12D**	Batch ID: **43867**		Analysis Date: **5/10/2024**	SeqNo: **1914555**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	ND	0.200						0		20	

Sample ID: **2405202-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91768**
Client ID: **MW-12D**	Batch ID: **43867**		Analysis Date: **5/10/2024**	SeqNo: **1914556**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.710	0.200	0.7500	0	94.7	80	120				
Nitrate (as N)	0.758	0.200	0.7500	0	101	80	120				

Sample ID: **2405202-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91768**
Client ID: **MW-12D**	Batch ID: **43867**		Analysis Date: **5/10/2024**	SeqNo: **1914557**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.750	0.200	0.7500	0	100	80	120	0.7100	5.48	20	
Nitrate (as N)	0.797	0.200	0.7500	0	106	80	120	0.7580	5.02	20	

Sample ID: **LCS-43867**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91768**
Client ID: **LCSW**	Batch ID: **43867**		Analysis Date: **5/10/2024**	SeqNo: **1914558**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.711	0.200	0.7500	0	94.8	90	110				
Nitrate (as N)	0.724	0.200	0.7500	0	96.5	90	110				

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-43867** SampType: **LCS** Units: **mg/L** Prep Date: **5/10/2024** RunNo: **91768**
Client ID: **LCSW** Batch ID: **43867** Analysis Date: **5/10/2024** SeqNo: **1914558**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-43868** SampType: **LCS** Units: **mg/L** Prep Date: **5/10/2024** RunNo: **91620**
Client ID: **LCSW** Batch ID: **43868** Analysis Date: **5/10/2024** SeqNo: **1911131**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.737	0.200	0.7500	0	98.3	90	110				
Nitrite (as N)	0.742	0.200	0.7500	0	98.9	90	110				
Nitrate (as N)	0.736	0.200	0.7500	0	98.1	90	110				
Sulfate	3.55	1.00	3.750	0	94.7	90	110				

Sample ID: **MB-43868** SampType: **MBLK** Units: **mg/L** Prep Date: **5/10/2024** RunNo: **91620**
Client ID: **MBLKW** Batch ID: **43868** Analysis Date: **5/10/2024** SeqNo: **1911133**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2405211-003BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/10/2024** RunNo: **91620**
Client ID: **BATCH** Batch ID: **43868** Analysis Date: **5/11/2024** SeqNo: **1911142**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.6	0.200						18.50	0.275	20	E
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	ND	0.200						0		20	
Sulfate	6.94	1.00						6.912	0.447	20	

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2405211-003BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/10/2024**	RunNo: **91620**
Client ID: **BATCH**	Batch ID: **43868**		Analysis Date: **5/11/2024**	SeqNo: **1911143**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	18.8	0.200	0.7500	18.50	41.1	80	120				ES
Nitrite (as N)	0.736	0.200	0.7500	0	98.1	80	120				
Nitrate (as N)	0.745	0.200	0.7500	0	99.3	80	120				
Sulfate	10.7	1.00	3.750	6.912	102	80	120				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **LCS-43905**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **LCSW**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.729	0.200	0.7500	0	97.2	90	110				
Nitrate (as N)	0.725	0.200	0.7500	0	96.7	90	110				
Sulfate	3.54	1.00	3.750	0	94.4	90	110				

Sample ID: **MB-43905**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **MBLKW**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912051**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2405118-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91669**
Client ID: **BATCH**	Batch ID: **43905**		Analysis Date: **5/13/2024**	SeqNo: **1912057**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	7.47	0.200						7.474	0	20	E
Nitrate (as N)	ND	0.200						0		20	
Sulfate	13.1	1.00						13.28	1.14	20	

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2405118-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/13/2024** SeqNo: **1912058**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.5	80	120				ES
Nitrate (as N)	0.725	0.200	0.7500	0	96.7	80	120				
Sulfate	17.1	1.00	3.750	13.28	102	80	120				

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405118-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/13/2024** SeqNo: **1912059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.07	0.200	0.7500	7.474	79.7	80	120	8.070	0.0248	20	ES
Nitrate (as N)	0.727	0.200	0.7500	0	96.9	80	120	0.7250	0.275	20	
Sulfate	16.9	1.00	3.750	13.28	95.2	80	120	17.10	1.46	20	

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Sample ID: **2405200-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.36	0.200						5.369	0.0745	20	
Nitrate (as N)	0.977	0.200						0.9910	1.42	20	
Sulfate	5.69	1.00						5.716	0.456	20	

Sample ID: **2405200-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91669**
Client ID: **BATCH** Batch ID: **43905** Analysis Date: **5/14/2024** SeqNo: **1912069**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	6.01	0.200	0.7500	5.369	85.7	80	120				E
Nitrate (as N)	1.73	0.200	0.7500	0.9910	98.7	80	120				
Sulfate	9.26	1.00	3.750	5.716	94.5	80	120				

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **LCS-43960**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/17/2024**		RunNo: **91816**		
Client ID: **LCSW**	Batch ID: **43960**					Analysis Date: **5/17/2024**		SeqNo: **1915444**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.722	0.200	0.7500	0	96.3	90	110				

Sample ID: **MB-43960**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/17/2024**		RunNo: **91816**		
Client ID: **MBLKW**	Batch ID: **43960**					Analysis Date: **5/17/2024**		SeqNo: **1915446**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									

Sample ID: **2405328-003ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/17/2024**		RunNo: **91816**		
Client ID: **BATCH**	Batch ID: **43960**					Analysis Date: **5/18/2024**		SeqNo: **1915467**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	44.3	2.00						45.16	2.01	20	D

Sample ID: **2405328-003AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/17/2024**		RunNo: **91816**		
Client ID: **BATCH**	Batch ID: **43960**					Analysis Date: **5/18/2024**		SeqNo: **1915468**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51.4	2.00	7.500	45.16	83.2	80	120				D

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R91640**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **MBLKW**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911464**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R91640**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **LCSW**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911465**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0	94.9	80	120				

Sample ID: **2405116-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911467**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405116-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911468**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.240	0.0500	0.2000	0.04024	99.9	80	120				

Sample ID: **2405116-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/13/2024**	RunNo: **91640**
Client ID: **BATCH**	Batch ID: **R91640**		Analysis Date: **5/13/2024**	SeqNo: **1911469**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.247	0.0500	0.2000	0.04024	103	80	120	0.2400	2.72	20	

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **2405211-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91640**
Client ID: **BATCH** Batch ID: **R91640** Analysis Date: **5/13/2024** SeqNo: **1911496**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2405211-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2024** RunNo: **91640**
Client ID: **BATCH** Batch ID: **R91640** Analysis Date: **5/13/2024** SeqNo: **1911497**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.190	0.0500	0.2000	0.01643	86.7	80	120				

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-91680**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **MBLKW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912582**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-91680**	SampType: **LCS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **LCSW**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912583**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.94	0.700	5.000	0	98.7	90.6	119				

Sample ID: **2405160-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912585**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.46	0.700						1.466	0.616	20	

Sample ID: **2405160-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912586**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.65	0.700	5.000	1.466	104	74.4	117				

Sample ID: **2405160-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **5/14/2024**		RunNo: **91680**		
Client ID: **BATCH**	Batch ID: **R91680**					Analysis Date: **5/14/2024**		SeqNo: **1912587**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.29	0.700	5.000	1.466	96.5	74.4	117	6.654	5.64	30	

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2405211-001DDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91680**
Client ID: **BATCH** Batch ID: **R91680** Analysis Date: **5/15/2024** SeqNo: **1912600**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	2.80	0.700						2.807	0.428	20	

Sample ID: **2405211-001DMS** SampType: **MS** Units: **mg/L** Prep Date: **5/15/2024** RunNo: **91680**
Client ID: **BATCH** Batch ID: **R91680** Analysis Date: **5/15/2024** SeqNo: **1912601**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.53	0.700	5.000	2.807	94.4	74.4	117				

Work Order: 2405202
CLIENT: Friedman & Bruya
Project: 405176

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R91779** SampType: **LCS** Units: **ppmv** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **LCSW** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914871**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	935	0.00500	1,000	0	93.5	73.6	124				
Ethene	918	0.0100	1,000	0	91.8	76.3	122				
Ethane	936	0.0100	1,000	0	93.6	76.1	123				

Sample ID: **MB-R91779** SampType: **MBLK** Units: **mg/L** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **MBLKW** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914874**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2405200-001AREP** SampType: **REP** Units: **mg/L** Prep Date: **5/16/2024** RunNo: **91779**
Client ID: **BATCH** Batch ID: **R91779** Analysis Date: **5/16/2024** SeqNo: **1914853**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	0.00855	0.00500						0.008822	3.12	30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2405202
Logged by:	Morgan Wilson	Date Received:	5/10/2024 11:30:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2405202

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER	
Fremont	
PROJECT NAME/NO.	PO #
405176	E-188
REMARKS	
EIM and EQuIS 4	

Page # 1 of 1

TURNAROUND TIME
☒ Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	RSK MEE	Sulfide	Alkalinity	Ammonia	TOC	Nitrate	Nitrite	Sulfate	Chloride		Notes
MW-12D		5/8/2024	1410	water		x	x	x	x	x	x	x	x	x		
MW-21D		5/8/2024	1040	water		x	x	x	x	x	x	x	x	x		
MW-8S		5/8/2024	1035	water		x	x	x	x	x	x	x	x	x		
MW-17D		5/8/2024	1650	water		x	x	x	x	x	x	x	x	x		
FD-01		5/8/2024	1200	water		x	x	x	x	x	x	x	x	x		

(The column headers RSK MEE through Chloride are printed under "ANALYSES REQUESTED".)

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Michael Erdahl	Friedman & Bruya	5/10/24	0815
Received by: [signature]	Nathan Hoffler	ATG	5/10/24	1130
Relinquished by:				
Received by:				

Data Usability Summary Report

Project Name: Port of Seattle Terminal 86

Project Description: Groundwater Samples

Sample Date(s): November 2024

Analytical Laboratory: Friedman & Bruya, Inc. – Seattle, WA

Alliance Technical Group – Seattle, WA

Validation Performed by: Eric Hitchens

Validation Reviewed by: Katherine Miller

Validation Date: 13 December 2024

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for the Sample Delivery Groups (SDGs) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Group Numbers**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the United States Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- NFG for Organic Data Review.

Data reported in this sampling event were reported to the laboratory reporting limit (RL).

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOPs). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQOs) for the project and are therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Group Numbers

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 411091;
- 411132; and
- 411101.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocols. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Analyses were performed on the samples listed in Table 1. Method holding times are listed in Table 2. Issues noted with sample management are listed below:

- Custody seals were not used when samples were dropped off at the laboratory or service center by the field staff, submitted to a laboratory-provided courier, or when transported between subcontracted laboratories.

1.2 CASE NARRATIVE

The laboratory report case narratives included the following issues:

- The laboratory report case narratives listed various quality control (QC) exceedances (e.g., calibration exceedances) not evaluated by this review; thus, no qualifiers were applied to the reported results.
- SDG 411091: There was insufficient sample media to analyze sample MW-6S-4Q24 for 6020B total and dissolved metals. No qualifiers were applied.
- SDG 411132: Dissolved metals samples were filtered at Friedman & Bruya. No qualifiers were applied.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol, with the following exceptions:

- SDG 411132: The subcontracted laboratory flagged nitrite and nitrate analysis as out of hold time; however, they incorrectly logged the sample dates. The samples were, in fact, run within 48 hours of collection; therefore, no qualifiers were applied.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

All sample dilutions were reviewed and found to be justified.

1.5 SURROGATE RECOVERY COMPLIANCE

Refer to Section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory-specified QC limits.

1.6 LABORATORY CONTROL SAMPLES

Refer to Section E 1.3. Compounds associated with the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits, with the following exceptions:

SDG #	Sample Type	Method	Analyte	RPD	Qualifier	Affected Samples
411091	LCS/LCSD	8260D	Bromomethane	21	J/None	None, samples are non-detect (ND)
411091	LCS/LCSD	8260D	2-Butanone	25		
411091	LCS/LCSD	8260D	2-Hexanone	22		
411132	LCS/LCSD	8260D	Bromomethane	31		
411132	LCS/LCSD	8260D	Trichlorofluoromethane	31		

1.7 MATRIX SPIKE SAMPLES

Refer to Section E 1.4. The sample(s) below were used for matrix spike/matrix spike duplicate (MS/MSD):

Sample Type	Lab Sample Number	Matrix Spike/Matrix Spike Duplicate Sample Client ID	Method(s)
MS	MW-10D-4Q24MS	MW-10D-4Q24	E300
MS	MW-3S-4Q24MS	MW-3S-4Q24	SM4500-NH3G
MSD	MW-3S-4Q24MSD	MW-3S-4Q24MS	SM4500-NH3G
MS	MW-3S-4Q24MS	MW-3S-4Q24	SM4500-S2-D
MSD	MW-3S-4Q24MSD	MW-3S-4Q24MS	SM4500-S2-D
MS	MW-3S-4Q24MS	MW-3S-4Q24	SM5310C
MSD	MW-3S-4Q24MSD	MW-3S-4Q24MS	SM5310C

The MS/MSD recoveries and the RPD between the MS and MSD results were within the specified limits, with the following exceptions:

Sample Type	Method	Parent Sample	Analyte	%R/RPD	Qualifier	Affected Samples
MS/MSD	SM4500-NH3G	MW-3S-4Q24	Ammonia	0/0	J-/R	All samples in 411091
MS	E300.0	MW-10D-4Q24	Chloride	64.9	None	None, dilution >5x

1.8 BLANK SAMPLE ANALYSIS

Refer to Section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred.

1.9 DUPLICATE SAMPLE ANALYSIS

Refer to Section E 1.6. The following sample was used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL):

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
2411119-001DREP	MW-3S-4Q24	RSK175

The following sample(s) were used for field duplicate analysis. The RPD comparison for detections in either the parent or duplicate sample(s) is shown below. RPDs were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the RL).

Primary Sample ID	Duplicate Sample ID	Method(s)
MW-9D-4Q24	FD-01-4Q24	E300, E310.2, NWTPH-DX, NWTPH-GX, RSK175, SM 2540D, SM 4500-NH3G, SM 4500-S2-D, SM 5310C, USEPA 6020B, EPA 8260D, USEPA 8270E

1.10 TARGET ANALYTE IDENTIFICATION

The laboratory flagged multiple sample results for sample chromatographic patterns not resembling the fuel standard used for quantitation; these data were qualified S as suspect.

1.11 PRECISION AND ACCURACY

Refer to Section E 1.7. Some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected except for rejected data in Table 3. A summary of qualifiers applied to this dataset is shown in Table 3.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the %R of the compounds.
- E 1.3 Laboratory Control Samples
  - The LCS/LCSD analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - MS/MSD data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post-digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the RPD found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.

- Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the %R of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - µg/kg micrograms per kilogram
  - µg/L micrograms per liter
  - µg/m^3 micrograms per cubic meter
  - mg/kg milligrams per kilogram
  - mg/L milligrams per liter
  - ppb v/v parts per billion volume/volume
  - pCi/L picocuries per liter
  - pg/g picograms per gram
  - pg/L picograms per liter
- Matrices:
  - AA Ambient Air
  - GS Soil Gas
  - GW/WG Groundwater
  - QW Water Quality
  - IA Indoor Air
  - SE Sediment
  - SO Soil
  - SSV Sub-slab Vapor
  - WQ Water Quality control matrix
  - WS Surface Water
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)

- Fractions:
  - N Normal (method cannot be filtered)
  - D Dissolved (filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
%v/v	Percent volume by volume
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DoD	Department of Defense
DQO	data quality objective
DUSR	Data Usability Summary Report
EIS	Extraction Internal Standard
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
H_2	Hydrogen gas
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MBK	Method Blank Contamination
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	not applicable
ND	Non-Detect
NFG	National Functional Guidelines
NH_3	Ammonia
NYSDEC	New York State Department of Environmental Conservation
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDS	Post-Digestion Spike
PEM	Performance Evaluation Mixture
PFAS	Per- and Polyfluoroalkyl Substances
PFBA	Perfluorbutanoic Acid
PFD	Perfluorodecalin
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane sulfonate
PFPeA	Perfluoropentanoic Acid
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SAP	Sampling Analysis Plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Standard Operating Procedure
SPE	Solid-Phase Extraction
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound
WP	Work Plan

5. Qualifiers

The qualifiers below are from the USEPA NFG and the data in the DUSR may contain these qualifiers:

- Concentration (C) Qualifiers:

  U — The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<reporting limit [RL] or <method detection limit [MDL]), or "ND".

  B — The compound was found in the sample and its associated blank. Its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers:

  E — The compound was quantitated above the calibration range.

  D — The concentration is based on a diluted sample analysis.

- Validation Qualifiers:

  J — The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  J+ — The result is an estimated quantity, but the result may be biased high.

  J- — The result is an estimated quantity, but the result may be biased low.

  J/UJ — as listed in exception tables J applies to detected data and UJ applies to non-detected data as reported by the laboratory.

  UJ — The compound was not detected. The reported sample quantitation limit is approximate.

  NJ — The analysis indicated the presence of a compound for which there is presumptive evidence to make a tentative identification; the associated numerical value is an estimated concentration only.

  R — The sample results were rejected as unusable; the compound may or may not be present in the sample.

  S — Result is suspect. See DUSR for details.

References

1. United States Environmental Protection Agency, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November.

2. United States Environmental Protection Agency, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November.

Attachments:

Table 1 – Sample Information
Table 2 – Method Holding Times
Table 3 – System Performance Summary

TABLES

TABLE 1
SAMPLE MANAGEMENT
WHIDBEY MARINE AUTO SUPPLY
FREELAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods[1]
MW-3S-4Q24	N	411091-01	11/05/2024	WG	A, B, C, D, E, F
MW-6S-4Q24	N	411091-02	11/05/2024	WG	A, B, C, F
MW-8S-4Q24	N	411091-03	11/05/2024	WG	A, B, C, E, F
MW-8S-4Q24	N	411091 -03	11/05/2024	WG	D
MW-21D-4Q24	N	411091-04	11/05/2024	WG	A, B, C, E, F
MW-21D-4Q24	N	411091 -04	11/05/2024	WG	D
MW-21D-4Q24	N	2411119-003A	11/05/2024	WG	G, H
MW-3S-4Q24	N	2411119-001A	11/05/2024	WG	G, H
MW-8S-4Q24	N	2411119-002A	11/05/2024	WG	G, H
MW-21D-4Q24	N	2411119-003B	11/05/2024	WG	I, J
MW-3S-4Q24	N	2411119-001B	11/05/2024	WG	I, J
MW-8S-4Q24	N	2411119-002B	11/05/2024	WG	I, J
MW-21D-4Q24	N	2411119-003C	11/05/2024	WG	K
MW-3S-4Q24	N	2411119-001C	11/05/2024	WG	K
MW-8S-4Q24	N	2411119-002C	11/05/2024	WG	K
MW-3S-4Q24	N	2411119-001D	11/05/2024	WG	L
MW-8S-4Q24	N	2411119-002D	11/05/2024	WG	L
MW-21D-4Q24	N	2411119-003D	11/05/2024	WG	L
MW-10D-4Q24	N	411101-01	11/06/2024	WG	A, B, C, D, E, F
MW-11D-4Q24	N	411101-02	11/06/2024	WG	A, B, C, E, F
MW-11D-4Q24	N	411101 -02	11/06/2024	WG	D
MW-12D-4Q24	N	411101-03	11/06/2024	WG	A, B, C, E, F
MW-12D-4Q24	N	411101 -03	11/06/2024	WG	D
MW-17D-4Q24	N	411101-04	11/06/2024	WG	A, B, C, E, F
MW-17D-4Q24	N	411101 -04	11/06/2024	WG	D
MW-19D-4Q24	N	411101-05	11/06/2024	WG	A, B, C, E, F
MW-19D-4Q24	N	411101 -05	11/06/2024	WG	D
MW-10D-4Q24	N	2411130-001A	11/06/2024	WG	G, H
MW-11D-4Q24	N	2411130-002A	11/06/2024	WG	G, H
MW-12D-4Q24	N	2411130-003A	11/06/2024	WG	G, H
MW-17D-4Q24	N	2411130-004A	11/06/2024	WG	G, H
MW-10D-4Q24	N	2411130-001C	11/06/2024	WG	I, J
MW-11D-4Q24	N	2411130-002C	11/06/2024	WG	I, J
MW-12D-4Q24	N	2411130-003C	11/06/2024	WG	I, J
MW-17D-4Q24	N	2411130-004C	11/06/2024	WG	I, J
MW-10D-4Q24	N	2411130-001B	11/06/2024	WG	K
MW-11D-4Q24	N	2411130-002B	11/06/2024	WG	K
MW-12D-4Q24	N	2411130-003B	11/06/2024	WG	K
MW-17D-4Q24	N	2411130-004B	11/06/2024	WG	K
MW-10D-4Q24	N	2411130-001D	11/06/2024	WG	L
MW-11D-4Q24	N	2411130-002D	11/06/2024	WG	L
MW-12D-4Q24	N	2411130-003D	11/06/2024	WG	L

TABLE 1
SAMPLE MANAGEMENT
WHIDBEY MARINE AUTO SUPPLY
FREELAND, WASHINGTON

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods[1]
MW-17D-4Q24	N	2411130-004D	11/06/2024	WG	L
MW-20D-4Q24	N	411132-01	11/07/2024	WG	A, B, C, D, E, F
MW-22D-4Q24	N	411132-02	11/07/2024	WG	A, B, C, E, F
MW-22D-4Q24	N	411132 -02	11/07/2024	WG	D
MW-23D-4Q24	N	411132-03	11/07/2024	WG	A, B, C, E, F
MW-23D-4Q24	N	411132 -03	11/07/2024	WG	D
MW-9D-4Q24	N	411132-04	11/07/2024	WG	A, B, C, E, F
MW-9D-4Q24	N	411132 -04	11/07/2024	WG	D
FD-01-4Q24	FD	411132-05	11/07/2024	WG	A, B, C, E, F
FD-01-4Q24	FD	411132 -05	11/07/2024	WG	D
FD-01-4Q24	FD	2411170-003A	11/07/2024	WG	G, H
MW-23D-4Q24	N	2411170-001A	11/07/2024	WG	G, H
MW-9D-4Q24	N	2411170-002A	11/07/2024	WG	G, H
FD-01-4Q24	FD	2411170-003C	11/07/2024	WG	K
MW-23D-4Q24	N	2411170-001C	11/07/2024	WG	K
MW-9D-4Q24	N	2411170-002C	11/07/2024	WG	K
MW-23D-4Q24	N	2411170-001B	11/07/2024	WG	I, J
MW-9D-4Q24	N	2411170-002B	11/07/2024	WG	I, J
FD-01-4Q24	FD	2411170-003B	11/07/2024	WG	I, J
MW-23D-4Q24	N	2411170-001D	11/07/2024	WG	L
MW-9D-4Q24	N	2411170-002D	11/07/2024	WG	L
FD-01-4Q24	FD	2411170-003D	11/07/2024	WG	L

Notes:
1. See Table 2

TABLE 2
METHOD HOLDING TIMES
WHIDBEY MARINE AUTO SUPPLY
FREELAND, WASHINGTON

Method Holding Times			
A	NWTPH-DX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid preserved 7 days for liquid unpreserved
B	SW8270E	Semivolatile Organic Compounds (SVOCs)	7 days extraction / 40 days analysis for liquid unpreserved
C	NWTPH-GX	Total Petroleum Hydrocarbons (TPH) Total Diesel	14 days for liquid preserved 7 days for liquid unpreserved
D	SM2540D	Total Suspended Solids	7 days unpreserved
E	SW6020B	Metals	180 days for liquid preserved
F	SW8260D	Volatile Organic Compounds (VOCs)	14 days for liquid preserved 7 days for liquid unpreserved
G	E300	Inorganic Anions (Chloride, Sulfate)	28 days for liquid unpreserved
		Inorganic Anions (Nitrate, Nitrite)	48 hours for liquid unpreserved
H	E310.2	Alkalinity	14 days for liquid unpreserved
I	SM4500-NH3G	Nitrogen (Ammonia) Automated Phenate	28 days for liquid preserved
J	SM5310C	Total Organic Carbon	28 days for liquid preserved
K	SM4500-S2-D	Total Sulfides	7 days for liquid preserved
L	RSK175	Dissolved Gases	14 days for liquid preserved 7 days for liquid unpreserved

TABLE 3
SYSTEM PERFORMANCE SUMMARY
WHIDBEY MARINE AUTO SUPPLY
FREELAND, WASHINGTON

SDG	Method	Sample ID	Lab ID	Analyte	Reportable Result	Reported Result	Validated Result	Reason for Qualifier
411091	SM2540D	MW-21D-4Q24	411091 -04	Total Suspended Solids (TSS)	Yes	8.4	8.4 J-	HTQ
411091	SM2540D	MW-3S-4Q24	411091-01	Total Suspended Solids (TSS)	Yes	6.8	6.8 J-	HTQ
411091	SM2540D	MW-8S-4Q24	411091 -03	Total Suspended Solids (TSS)	Yes	10	10 J-	HTQ
411091(2411119)	SM4500-NH3G	MW-21D-4Q24	2411119-003B	Ammonia	Yes	U	R	MSD
411091(2411119)	SM4500-NH3G	MW-3S-4Q24	2411119-001B	Ammonia	Yes	U	R	MSD
411091(2411119)	SM4500-NH3G	MW-8S-4Q24	2411119-002B	Ammonia	Yes	U	R	MSD
411132	NWTPH-DX	FD-01-4Q24	411132-05	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	3100	3100 S	QUA
411101	NWTPH-DX	MW-11D-4Q24	411101-02	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	54	54 S	QUA
411101	NWTPH-DX	MW-12D-4Q24	411101-03	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	5700	5700 S	QUA
411101	NWTPH-DX	MW-17D-4Q24	411101-04	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	610	610 S	QUA
411101	NWTPH-DX	MW-19D-4Q24	411101-05	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	110	110 S	QUA
411132	NWTPH-DX	MW-20D-4Q24	411132-01	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	93	93 S	QUA
411091	NWTPH-DX	MW-21D-4Q24	411091-04	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	470	470 S	QUA
411132	NWTPH-DX	MW-23D-4Q24	411132-03	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	4500	4500 S	QUA
411091	NWTPH-DX	MW-8S-4Q24	411091-03	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	1500	1500 S	QUA
411132	NWTPH-DX	MW-9D-4Q24	411132-04	Total Petroleum Hydrocarbons (C10-C25) DRO	Yes	3300	3300 S	QUA

Notes:
MSD = Matrix spike/matrix spike duplicate percent recoveries or relative percent difference were outside the specified limits.
QUA = Analyte present; the reported value may not be accurate or precise due to poor chromatography. The sample chromatogram exhibits baseline interference that impacted sample quantitation.
HTQ = Holding time exceedance.
S = Result is suspect. See validation report for details.
R = The sample results were rejected as unusable; the compound may or may not be present in the sample.
J- = The result is an estimated quantity, but the result may be biased low.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

November 18, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on November 6, 2024 from the Whidbey Marine PO 0204475-001, F&BI 411091 project. There are 35 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1118R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 6, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine PO 0204475-001, F&BI 411091 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
411091 -01	MW-3S-4Q24
411091 -02	MW-6S-4Q24
411091 -03	MW-8S-4Q24
411091 -04	MW-21D-4Q24

Samples MW-3S-4Q24, MW-8S-4Q24, and MW-21D-4Q24 were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard did not meet the acceptance criteria for several analytes. The data were flagged accordingly.

The 8260D laboratory control sample and laboratory control sample duplicate did not meet the relative percent difference for several compounds. The analytes were not detected, therefore the data were acceptable.

There was insufficient sample media to analyze sample MW-6S-4Q24 for 6020B total and dissolved metals.

All other quality control requirements were acceptable.

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091
Date Extracted: 11/08/24
Date Analyzed: 11/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-3S-4Q24 411091-01	<100	105
MW-6S-4Q24 411091-02	<100	105
MW-8S-4Q24 411091-03	8,800	110
MW-21D-4Q24 411091-04	3,600	116
Method Blank 04-2700 MB	<100	108

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091
Date Extracted: 11/07/24
Date Analyzed: 11/07/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-3S-4Q24 411091-01	<50	<250	86
MW-6S-4Q24 411091-02 1/1.2	<60	<300	79
MW-8S-4Q24 411091-03	1,500 x	<250	87
MW-21D-4Q24 411091-04	470 x	<250	88
Method Blank 04-2755 MB2	<50	<250	81

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-3S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-01
Date Analyzed:	11/12/24	Data File:	111239.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	99	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-6S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-02
Date Analyzed:	11/14/24	Data File:	111345.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-03 1/10
Date Analyzed:	11/12/24	Data File:	111241.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<5 j
Vinyl chloride	<0.2	Dibromochloromethane	<5
Bromomethane	<50	1,2-Dibromoethane (EDB)	<0.1
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500 ca	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	68	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	83
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	150
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	320
Chloroform	<10	1,1,2,2-Tetrachloroethane	<2
2-Butanone (MEK)	<200 ca	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<2	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<5	1,2,4-Trimethylbenzene	770
Benzene	<0.35 j	sec-Butylbenzene	10
Trichloroethene	<0.5 j	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<5	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<4	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<5
trans-1,3-Dichloropropene	<4	Naphthalene	12
1,1,2-Trichloroethane	<5	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-04
Date Analyzed:	11/12/24	Data File:	111242.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	45
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	73
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	270
Hexane	9.6	o-Xylene	100
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	7.8
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	23
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	79
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	250 ve
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	76
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-04 1/10
Date Analyzed:	11/14/24	Data File:	111346.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	71	132
Toluene-d8	100	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)
1,2,4-Trimethylbenzene	270

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	04-2775 mb
Date Analyzed:	11/12/24	Data File:	111230.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	101	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<0.5 j
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.035 j	sec-Butylbenzene	<1
Trichloroethene	<0.05 j	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-3S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	411091-01
Date Analyzed:	11/07/24	Data File:	110711.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	82	15	144
2-Fluorobiphenyl	80	25	128
2,4,6-Tribromophenol	79	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	411091-02
Date Analyzed:	11/07/24	Data File:	110712.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	88	15	144
2-Fluorobiphenyl	91	25	128
2,4,6-Tribromophenol	99	10	142
Terphenyl-d14	94	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.33
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.022
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	411091-03
Date Analyzed:	11/07/24	Data File:	110713.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	89	15	144
2-Fluorobiphenyl	88	25	128
2,4,6-Tribromophenol	110	10	142
Terphenyl-d14	99	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	12
2-Methylnaphthalene	97 ve
1-Methylnaphthalene	62
Acenaphthylene	<0.02
Acenaphthene	0.17
Fluorene	0.21
Phenanthrene	0.12
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	411091-03 1/10
Date Analyzed:	11/10/24	Data File:	110919.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	72 d	11	173
2-Fluorobiphenyl	72 d	25	128
2,4,6-Tribromophenol	111 d	10	140
Terphenyl-d14	82 d	50	150

Compounds:	Concentration ug/L (ppb)
2-Methylnaphthalene	85

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	411091-04
Date Analyzed:	11/07/24	Data File:	110714.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	15	144
2-Fluorobiphenyl	78	25	128
2,4,6-Tribromophenol	96	10	142
Terphenyl-d14	87	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	49
2-Methylnaphthalene	19
1-Methylnaphthalene	7.5
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	0.021
Phenanthrene	0.021
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/07/24	Lab ID:	04-2760 mb
Date Analyzed:	11/07/24	Data File:	110709.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	85	15	144
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	70	10	142
Terphenyl-d14	81	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-01
Date Analyzed:	11/12/24	Data File:	411091-01.253
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.8
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-03
Date Analyzed:	11/12/24	Data File:	411091-03.256
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.2
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-04
Date Analyzed:	11/12/24	Data File:	411091-04.259
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.7
Lead	2.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	I4-968 mb
Date Analyzed:	11/12/24	Data File:	I4-968 mb.179
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-3S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-01
Date Analyzed:	11/14/24	Data File:	411091-01.106
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.0
Lead	<1
Manganese	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-03
Date Analyzed:	11/12/24	Data File:	411091-03.248
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.7
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-8S-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-03 x100
Date Analyzed:	11/14/24	Data File:	411091-03 x100.107
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	1,400

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-04
Date Analyzed:	11/12/24	Data File:	411091-04.249
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.3
Lead	2.0

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-21D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/06/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	411091-04 x10
Date Analyzed:	11/14/24	Data File:	411091-04 x10.108
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	31

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/12/24	Lab ID:	I4-967 mb
Date Analyzed:	11/12/24	Data File:	I4-967 mb.177
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091
Date Extracted: 11/12/24
Date Analyzed: 11/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-3S-4Q24 411091-01	6.8
MW-8S-4Q24 411091 -03	10
MW-21D-4Q24 411091 -04	8.4
Method Blank I4-0973 MB	<5

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 411091-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	70-130

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	96	65-151	0

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 411094-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	98	27-164
Chloromethane	ug/L (ppb)	10	<10	97	34-141
Vinyl chloride	ug/L (ppb)	10	<0.02	99	16-176
Bromomethane	ug/L (ppb)	10	<5	96	10-193
Chloroethane	ug/L (ppb)	10	<1	107	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	91	50-150
Acetone	ug/L (ppb)	50	<50	52	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
Hexane	ug/L (ppb)	10	<5	94	49-161
Methylene chloride	ug/L (ppb)	10	<5	67	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	102	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	101	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	103	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	98	62-152
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	50-150
Chloroform	ug/L (ppb)	10	<1	97	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	84	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	103	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	99	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	101	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	97	50-150
Benzene	ug/L (ppb)	10	<0.35	105	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	99	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	96	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	96	50-150
Dibromomethane	ug/L (ppb)	10	<1	95	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	94	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	95	48-145
Toluene	ug/L (ppb)	10	<1	106	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	94	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	108	50-150
2-Hexanone	ug/L (ppb)	50	<10	90	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	103	50-150
Tetrachloroethene	ug/L (ppb)	10	3.3	100 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	104	50-150
Chlorobenzene	ug/L (ppb)	10	<1	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	50-150
m,p-Xylene	ug/L (ppb)	20	<2	108	50-150
o-Xylene	ug/L (ppb)	10	<1	105	50-150
Styrene	ug/L (ppb)	10	<1	99	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	103	50-150
Bromoform	ug/L (ppb)	10	<5	96	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	106	50-150
Bromobenzene	ug/L (ppb)	10	<1	102	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	105	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	112	57-162
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	103	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	103	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	102	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	105	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	118	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	102	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	102	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	100	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	99	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	102	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	95	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	97	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	95	42-150
Naphthalene	ug/L (ppb)	10	<1	104	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	96	44-155

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	98	106	49-149	8
Chloromethane	ug/L (ppb)	10	89	100	34-143	12
Vinyl chloride	ug/L (ppb)	10	95	102	43-149	7
Bromomethane	ug/L (ppb)	10	89	110	28-182	21 vo
Chloroethane	ug/L (ppb)	10	103	112	59-157	8
Trichlorofluoromethane	ug/L (ppb)	10	98	107	59-141	9
Acetone	ug/L (ppb)	50	48	54	20-139	12
1,1-Dichloroethene	ug/L (ppb)	10	92	100	67-138	8
Hexane	ug/L (ppb)	10	91	97	50-161	6
Methylene chloride	ug/L (ppb)	10	69	81	29-192	16
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	105	70-130	10
trans-1,2-Dichloroethene	ug/L (ppb)	10	95	105	70-130	10
1,1-Dichloroethane	ug/L (ppb)	10	96	106	70-130	10
2,2-Dichloropropane	ug/L (ppb)	10	98	105	71-148	7
cis-1,2-Dichloroethene	ug/L (ppb)	10	96	105	70-130	9
Chloroform	ug/L (ppb)	10	90	100	70-130	11
2-Butanone (MEK)	ug/L (ppb)	50	68	87	50-157	25 vo
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	97	107	70-130	10
1,1,1-Trichloroethane	ug/L (ppb)	10	93	102	70-130	9
1,1-Dichloropropene	ug/L (ppb)	10	93	104	70-130	11
Carbon tetrachloride	ug/L (ppb)	10	89	101	70-130	13
Benzene	ug/L (ppb)	10	97	107	70-130	10
Trichloroethene	ug/L (ppb)	10	91	102	70-130	11
1,2-Dichloropropane	ug/L (ppb)	10	89	99	70-130	11
Bromodichloromethane	ug/L (ppb)	10	91	102	70-130	11
Dibromomethane	ug/L (ppb)	10	88	99	70-130	12
4-Methyl-2-pentanone	ug/L (ppb)	50	89	102	70-130	14
cis-1,3-Dichloropropene	ug/L (ppb)	10	90	97	70-130	7
Toluene	ug/L (ppb)	10	105	106	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	93	95	70-130	2
1,1,2-Trichloroethane	ug/L (ppb)	10	105	107	70-130	2
2-Hexanone	ug/L (ppb)	50	82	102	66-132	22 vo
1,3-Dichloropropane	ug/L (ppb)	10	101	106	70-130	5
Tetrachloroethene	ug/L (ppb)	10	104	104	70-130	0
Dibromochloromethane	ug/L (ppb)	10	96	100	63-142	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	105	70-130	2
Chlorobenzene	ug/L (ppb)	10	101	103	70-130	2
Ethylbenzene	ug/L (ppb)	10	105	106	70-130	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	101	102	70-130	1
m,p-Xylene	ug/L (ppb)	20	104	105	70-130	1
o-Xylene	ug/L (ppb)	10	104	106	70-130	2
Styrene	ug/L (ppb)	10	93	100	70-130	7
Isopropylbenzene	ug/L (ppb)	10	101	105	70-130	4
Bromoform	ug/L (ppb)	10	93	99	50-157	6
n-Propylbenzene	ug/L (ppb)	10	106	103	70-130	3
Bromobenzene	ug/L (ppb)	10	103	103	70-130	0
1,3,5-Trimethylbenzene	ug/L (ppb)	10	103	100	52-150	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	109	109	75-140	0
1,2,3-Trichloropropane	ug/L (ppb)	10	103	104	40-153	1
2-Chlorotoluene	ug/L (ppb)	10	104	100	70-130	4
4-Chlorotoluene	ug/L (ppb)	10	101	101	70-130	0
tert-Butylbenzene	ug/L (ppb)	10	107	104	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	103	101	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	105	102	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	105	103	70-130	2
1,3-Dichlorobenzene	ug/L (ppb)	10	104	102	70-130	2
1,4-Dichlorobenzene	ug/L (ppb)	10	101	102	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	105	103	70-130	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	96	94	70-130	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	102	94	70-130	8
Hexachlorobutadiene	ug/L (ppb)	10	106	101	70-130	5
Naphthalene	ug/L (ppb)	10	98	90	61-133	9
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	92	69-143	6

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	81	79	50-104	2
2-Methylnaphthalene	ug/L (ppb)	10	82	79	52-113	4
1-Methylnaphthalene	ug/L (ppb)	10	83	80	51-115	4
Acenaphthylene	ug/L (ppb)	10	97	100	60-114	3
Acenaphthene	ug/L (ppb)	10	94	91	57-110	3
Fluorene	ug/L (ppb)	10	97	97	61-115	0
Phenanthrene	ug/L (ppb)	10	98	101	63-113	3
Anthracene	ug/L (ppb)	10	100	101	65-117	1
Fluoranthene	ug/L (ppb)	10	107	108	68-121	1
Pyrene	ug/L (ppb)	10	96	98	62-133	2
Benz(a)anthracene	ug/L (ppb)	10	97	98	66-131	1
Chrysene	ug/L (ppb)	10	94	95	66-129	1
Benzo(a)pyrene	ug/L (ppb)	10	105	101	66-129	4
Benzo(b)fluoranthene	ug/L (ppb)	10	105	104	55-144	1
Benzo(k)fluoranthene	ug/L (ppb)	10	107	101	58-139	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	101	104	62-136	3
Dibenz(a,h)anthracene	ug/L (ppb)	10	106	105	55-146	1
Benzo(g,h,i)perylene	ug/L (ppb)	10	101	100	58-137	1

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 411091-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	90	87	75-125	3
Lead	ug/L (ppb)	10	<10	102	98	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	92	80-120
Lead	ug/L (ppb)	10	96	80-120

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 411072-18 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	10.8	93 b	92 b	75-125	1 b
Lead	ug/L (ppb)	10	<1	102	102	75-125	0
Manganese	ug/L (ppb)	10	1,320	584 b	634 b	75-125	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-120
Lead	ug/L (ppb)	10	99	80-120
Manganese	ug/L (ppb)	10	101	80-120

Date of Report: 11/18/24
Date Received: 11/06/24
Project: Whidbey Marine PO 0204475-001, F&BI 411091

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 411153-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	42	43	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

(WP) ~~411090~~ 411091

SAMPLE CHAIN OF CUSTODY

ME 11-06-24

Page # 1 of 1 VW 4

Report To H. Goel, V. Pitchiyan

Company Haley & Aldrich

Address

City, State, ZIP

Phone Email

SAMPLERS (signature)

PROJECT NAME: Whidbey Marine

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME K5
☒ Standard turnaround
☐ RUSH F3
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	~~NWTPH-HCID~~ TSS	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TPH/DS ASTPH	nitrate nitrite chloride sulfate	ammonia sulfide alkalinity	MEG, EDB EDC, MTBE	TOC	DS ferrous Manganese	Notes
MW-3S-4Q24	01A-Q	11/5/24	1520	Water	17	X	X		X	X	X		X	X	X	X	X	X	
MW-6S-4Q24	02A-G		1330		7	X	X		X	X	X		X						
MW-8S-4Q24	03A-Q		1135		17	X	X		X	X	X		X	X	X	X	X	X	
MW-21D-4Q24	04A-P		1405		16	X	X		X	X	X		X	X	X	X	X	X	
				End 16															
																			For MW-6S
																			filtration
																			TPH and VOCs (Low recovery)
							Samples received at 1 °C												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	11/5/24	0730
Received by:	VINT	FBI	11-6-24	12:30
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 411091 CLIENT HNA INITIALS/DATE: (NA) 11/6/24

If custody seals are present on cooler, are they intact? ☑ NA ☐ YES ☐ NO

Cooler/Sample temperature 1 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO Initials/Date: GMB 11/6
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ~~☑ YES~~ GMB ☑ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☐ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☑ Yes ☐ No	☐ Not on COC/label
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	☑ Yes ☐ No	
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)
No unpreserved sample for -02

Air Samples: Were any additional canisters/tubes received? ☐ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ Number of unused TO17 tubes _____

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 411091,
Work Order Number: 2411119

November 13, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 3 sample(s) on 11/6/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by EPA 310.2
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *11/13/2024*

CLIENT: Friedman & Bruya
Project: 411091
Work Order: 2411119

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2411119-001	MW-3S-4Q24	11/05/2024 3:20 PM	11/06/2024 3:05 PM
2411119-002	MW-8S-4Q24	11/05/2024 11:35 AM	11/06/2024 3:05 PM
2411119-003	MW-21D-4Q24	11/05/2024 2:05 PM	11/06/2024 3:05 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2411119**

Date: **11/13/2024**

CLIENT: Friedman & Bruya
Project: 411091

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2411119**
Date Reported: **11/13/2024**

CLIENT: Friedman & Bruya
Project: 411091

Lab ID: 2411119-001 **Collection Date:** 11/5/2024 3:20:00 PM
Client Sample ID: **MW-3S-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	ND	0.00500		mg/L	1	11/12/2024 2:22:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:22:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:22:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45763		Analyst: OP
Chloride	24.2	2.00	D	mg/L	10	11/8/2024 2:45:00 AM
Nitrite (as N)	ND	0.400	D	mg/L	2	11/7/2024 12:15:00 AM
Nitrate (as N)	8.41	0.400	D	mg/L	2	11/7/2024 12:15:00 AM
NOTES: Diluted due to high levels of non-target analytes.						
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	1.67	0.700		mg/L	1	11/11/2024 4:46:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	136	25.0	D	mg/L	10	11/11/2024 3:32:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 11:13:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Analytical Report

Work Order: **2411119**
Date Reported: **11/13/2024**

CLIENT: Friedman & Bruya
Project: 411091

Lab ID: 2411119-002 **Collection Date:** 11/5/2024 11:35:00 AM
Client Sample ID: **MW-8S-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.00501	0.00500		mg/L	1	11/12/2024 2:27:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:27:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:27:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45763		Analyst: OP
Chloride	35.0	2.00	D	mg/L	10	11/8/2024 3:08:00 AM
Nitrite (as N)	ND	0.400	D	mg/L	2	11/7/2024 12:38:00 AM
Nitrate (as N)	1.83	0.400	D	mg/L	2	11/7/2024 12:38:00 AM
NOTES: Diluted due to high levels of non-target analytes.						
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	4.39	0.700		mg/L	1	11/11/2024 6:20:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	191	25.0	D	mg/L	10	11/11/2024 3:34:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 11:33:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	0.355	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Analytical Report

Work Order: **2411119**
Date Reported: **11/13/2024**

CLIENT: Friedman & Bruya
Project: 411091

Lab ID: 2411119-003 **Collection Date:** 11/5/2024 2:05:00 PM
Client Sample ID: **MW-21D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	ND	0.00500		mg/L	1	11/12/2024 2:29:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:29:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:29:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45763		Analyst: OP
Chloride	55.3	2.00	D	mg/L	10	11/8/2024 3:31:00 AM
Nitrite (as N)	ND	0.400	D	mg/L	2	11/7/2024 1:01:00 AM
Nitrate (as N)	1.92	0.400	D	mg/L	2	11/7/2024 1:01:00 AM
NOTES: Diluted due to high levels of non-target analytes.						
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	1.67	0.700		mg/L	1	11/11/2024 6:49:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	130	25.0	D	mg/L	10	11/11/2024 3:37:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 11:38:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-95619**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **MBLKW**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996046**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-95619**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **LCSW**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996047**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	26.2	2.50	25.00	0	105	83.8	121				

Sample ID: **2411094-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **BATCH**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	44.9	2.50						46.00	2.42	20	

Sample ID: **2411119-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **MW-3S-4Q24**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	67.7	2.50						68.60	1.32	20	E

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-45805** SampType: **MBLK** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95592**
Client ID: **MBLKW** Batch ID: **45805** Analysis Date: **11/8/2024** SeqNo: **1994856**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-45805** SampType: **LCS** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95592**
Client ID: **LCSW** Batch ID: **45805** Analysis Date: **11/8/2024** SeqNo: **1994857**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.445	0.150	0.5000	0	89.0	81.7	122				

Sample ID: **2411119-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95592**
Client ID: **MW-3S-4Q24** Batch ID: **45805** Analysis Date: **11/8/2024** SeqNo: **1994859**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2411119-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95592**
Client ID: **MW-3S-4Q24** Batch ID: **45805** Analysis Date: **11/8/2024** SeqNo: **1994860**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2411119-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95592**
Client ID: **MW-3S-4Q24** Batch ID: **45805** Analysis Date: **11/8/2024** SeqNo: **1994861**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138	0		30	S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-45763** SampType: **MBLK** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **MBLKW** Batch ID: **45763** Analysis Date: **11/6/2024** SeqNo: **1994068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									

Sample ID: **LCS-45763** SampType: **LCS** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **LCSW** Batch ID: **45763** Analysis Date: **11/6/2024** SeqNo: **1994070**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.742	0.200	0.7500	0	98.9	90	110				
Nitrite (as N)	0.723	0.200	0.7500	0	96.4	90	110				
Nitrate (as N)	0.736	0.200	0.7500	0	98.1	90	110				

Sample ID: **2411038-001CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **BATCH** Batch ID: **45763** Analysis Date: **11/6/2024** SeqNo: **1994072**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.09	0.200						3.045	1.50	20	
Nitrite (as N)	ND	0.200						0		20	H
Nitrate (as N)	ND	0.200						0		20	H

Sample ID: **2411038-001CMS** SampType: **MS** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **BATCH** Batch ID: **45763** Analysis Date: **11/6/2024** SeqNo: **1994073**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.81	0.200	0.7500	3.045	102	80	120				
Nitrite (as N)	0.726	0.200	0.7500	0	96.8	80	120				H
Nitrate (as N)	0.718	0.200	0.7500	0	95.7	80	120				H

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2411038-001CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **BATCH** Batch ID: **45763** Analysis Date: **11/6/2024** SeqNo: **1994074**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.83	0.200	0.7500	3.045	105	80	120	3.812	0.445	20	
Nitrite (as N)	0.734	0.200	0.7500	0	97.9	80	120	0.7260	1.10	20	H
Nitrate (as N)	0.722	0.200	0.7500	0	96.3	80	120	0.7180	0.556	20	H

Sample ID: **2411004-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **BATCH** Batch ID: **45763** Analysis Date: **11/7/2024** SeqNo: **1994689**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	21.4	0.200						21.58	0.978	20	E
Nitrite (as N)	ND	0.200						0		20	H
Nitrate (as N)	ND	0.200						0		20	H

Sample ID: **2411004-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **11/6/2024** RunNo: **95561**
Client ID: **BATCH** Batch ID: **45763** Analysis Date: **11/7/2024** SeqNo: **1994690**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	21.8	0.200	0.7500	21.58	23.6	80	120				ES
Nitrite (as N)	0.743	0.200	0.7500	0	99.1	80	120				H
Nitrate (as N)	0.938	0.200	0.7500	0.1910	99.6	80	120				H

NOTES:
S - Spiked amount was low relative to sample concentration. Outlying spike recoveries may be expected.

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R95600**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **MBLKW**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995054**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R95600**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **LCSW**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995055**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.201	0.0500	0.2000	0	101	80	120				

Sample ID: **2411119-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995057**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2411119-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995058**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.195	0.0500	0.2000	0.02592	84.5	80	120				

Sample ID: **2411119-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995059**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.191	0.0500	0.2000	0.02592	82.6	80	120	0.1948	1.93	20	

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R95639**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **MBLKW**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995924**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R95639**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **LCSW**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995925**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	26.2	0.700	25.00	0	105	87.6	109				

Sample ID: **2411119-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995927**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.69	0.700						1.666	1.19	20	

Sample ID: **2411119-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995928**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.0	0.700	25.00	1.666	101	73.1	113				

Sample ID: **2411119-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **MW-3S-4Q24**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995929**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.3	0.700	25.00	1.666	102	73.1	113	26.97	1.09	30	

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2411179-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/11/2024** RunNo: **95639**
Client ID: **BATCH** Batch ID: **R95639** Analysis Date: **11/11/2024** SeqNo: **1995917**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.60	0.700						4.801	4.38	20	

Sample ID: **2411179-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **11/11/2024** RunNo: **95639**
Client ID: **BATCH** Batch ID: **R95639** Analysis Date: **11/11/2024** SeqNo: **1995918**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	29.7	0.700	25.00	4.801	99.6	73.1	113				

Work Order: 2411119
CLIENT: Friedman & Bruya
Project: 411091

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R95662** SampType: **LCS** Units: **ppmv** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **LCSW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,080	0.00500	1,000	0	108	73.6	124				
Ethene	1,020	0.0100	1,000	0	102	76.3	122				
Ethane	1,020	0.0100	1,000	0	102	76.1	123				

Sample ID: **MB-R95662** SampType: **MBLK** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **MBLKW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996435**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2411119-001DREP** SampType: **REP** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **MW-3S-4Q24** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996421**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2411119
Logged by:	Morgan Wilson	Date Received:	11/6/2024 3:05:00 PM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp °C
Sample	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2411119

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER
Alliance TG

PROJECT NAME/NO.	PO #
411091	E-59

REMARKS

EIM

TURNAROUND TIME
☒ Standard
RUSH__
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Nitrate, Nitrite, Chloride,	Ammonia	Sulfide	Alkalinity	TOC	Dissolved Gases Fish MEE					Notes
MW-3S-4Q24		11/5/2024	15:20	water	6	x	x	x	x	x	x					
MW-8S-4Q24		11/5/2024	11:35	water	6	x	x	x	x	x	x					
MW-21D-4Q24		11/5/2024	14:05	water	6	x	x	x	x	x	x					

Friedman & Bruya, Inc.
5500 4th Ave S
Seattle, WA 98115
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Mac Goldman	Friedman and Bruya	11/6/24	14:05
Received by:		Nathan Kotler	ATG	11/6/24	1505
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

November 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on November 7, 2024 from the Whidbey Marine PO 0204475-001, F&BI 411101 project. There are 43 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1119R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 7, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine PO 0204475-001, F&BI 411101 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
411101 -01	MW-10D-4Q24
411101 -02	MW-11D-4Q24
411101 -03	MW-12D-4Q24
411101 -04	MW-17D-4Q24
411101 -05	MW-19D-4Q24

Samples MW-10D-4Q24, MW-11D-4Q24, MW-12D-4Q24, and MW-17D-4Q24 were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard exceeded the acceptance criteria for acetone and 2-butanone. The compounds were not detected, therefore this did not represent an out of control condition, and were qualified with a "k" qualifier. The results are not considered estimates.

The 8260D laboratory control sample and laboratory control sample duplicate did not meet the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

The dissolved metals samples were filtered at Friedman and Bruya. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101
Date Extracted: 11/08/24
Date Analyzed: 11/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-10D-4Q24 411101-01	<100	106
MW-11D-4Q24 411101-02	110	112
MW-12D-4Q24 411101-03 1/40	49,000	117
MW-17D-4Q24 411101-04 1/20	4,200	112
MW-19D-4Q24 411101-05	<100	104
Method Blank 04-2699 MB	<100	100

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101
Date Extracted: 11/08/24
Date Analyzed: 11/08/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-10D-4Q24 411101-01	<50	<250	106
MW-11D-4Q24 411101-02	54 x	<250	102
MW-12D-4Q24 411101-03	5,700 x	<250	112
MW-17D-4Q24 411101-04	610 x	<250	121
MW-19D-4Q24 411101-05	110 x	<250	111
Method Blank 04-2766 MB	<50	<250	89

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-10D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-01
Date Analyzed:	11/14/24	Data File:	111342.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	71	132
Toluene-d8	99	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	32
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-11D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-02
Date Analyzed:	11/14/24	Data File:	111343.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	99	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	2.2
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	2.2
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	8.9
Hexane	<5	o-Xylene	3.2
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	2.6
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	4.2	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-03 1/100
Date Analyzed:	11/14/24	Data File:	111347.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	97	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	1,600
Acetone	<5,000 k	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	6,200
Hexane	<500	o-Xylene	2,600
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	150
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	460
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000 k	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	1,800
Benzene	<3.5	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	3,000	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	590
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-04
Date Analyzed:	11/15/24	Data File:	111517.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	102	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	290 ve
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	500 ve
Hexane	15	o-Xylene	13
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	12
trans-1,2-Dichloroethene	3.5	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	30
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	6.5	1,3,5-Trimethylbenzene	42
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	1.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	220 ve
Benzene	52	sec-Butylbenzene	2.0
Trichloroethene	10	p-Isopropyltoluene	1.1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	14	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	88
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-04 1/10
Date Analyzed:	11/18/24	Data File:	111807.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	100	72	130

Compounds:	Concentration ug/L (ppb)
Ethylbenzene	340
m,p-Xylene	520
1,2,4-Trimethylbenzene	240

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-19D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-05
Date Analyzed:	11/14/24	Data File:	111344.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	97	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	04-2780 mb
Date Analyzed:	11/13/24	Data File:	111330.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	71	132
Toluene-d8	96	68	139
4-Bromofluorobenzene	98	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.035	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-10D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-01
Date Analyzed:	11/12/24	Data File:	111206.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	73	11	173
2-Fluorobiphenyl	76	25	128
2,4,6-Tribromophenol	87	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-11D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-02
Date Analyzed:	11/12/24	Data File:	111207.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	78	11	173
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	100	10	140
Terphenyl-d14	79	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.98
2-Methylnaphthalene	0.32
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-03
Date Analyzed:	11/12/24	Data File:	111208.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	87	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	126	10	140
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	200 ve
2-Methylnaphthalene	110 ve
1-Methylnaphthalene	59 ve
Acenaphthylene	<0.02
Acenaphthene	0.10
Fluorene	0.20
Phenanthrene	0.27
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	0.022
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-03 1/50
Date Analyzed:	11/12/24	Data File:	111219.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	80 d	11	173
2-Fluorobiphenyl	65 d	25	128
2,4,6-Tribromophenol	134 d	10	140
Terphenyl-d14	85 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	500
2-Methylnaphthalene	130
1-Methylnaphthalene	56

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-04
Date Analyzed:	11/12/24	Data File:	111209.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	75	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	101	10	140
Terphenyl-d14	80	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	43 ve
2-Methylnaphthalene	15
1-Methylnaphthalene	8.1
Acenaphthylene	<0.02
Acenaphthene	0.033
Fluorene	0.029
Phenanthrene	0.025
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-04 1/10
Date Analyzed:	11/12/24	Data File:	111220.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	76 d	11	173
2-Fluorobiphenyl	73 d	25	128
2,4,6-Tribromophenol	104 d	10	140
Terphenyl-d14	99 d	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	66

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411101-05
Date Analyzed:	11/12/24	Data File:	111210.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	11	173
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	103	10	140
Terphenyl-d14	83	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	04-2794 mb2
Date Analyzed:	11/11/24	Data File:	111113.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	11	173
2-Fluorobiphenyl	74	25	128
2,4,6-Tribromophenol	99	10	140
Terphenyl-d14	76	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-10D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-01
Date Analyzed:	11/14/24	Data File:	411101-01.183
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.7
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-11D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-02
Date Analyzed:	11/14/24	Data File:	411101-02.184
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.2
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-03
Date Analyzed:	11/14/24	Data File:	411101-03.185
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	30
Lead	3.4

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-04
Date Analyzed:	11/14/24	Data File:	411101-04.186
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	29
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-05
Date Analyzed:	11/14/24	Data File:	411101-05.187
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	15
Lead	1.9

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	I4-974 mb2
Date Analyzed:	11/13/24	Data File:	I4-974 mb2.195
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-01
Date Analyzed:	11/13/24	Data File:	411101-01.130
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.5
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-01
Date Analyzed:	11/18/24	Data File:	411101-01.071
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	4.3

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-11D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-02
Date Analyzed:	11/13/24	Data File:	411101-02.136
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	9.0

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-03
Date Analyzed:	11/13/24	Data File:	411101-03.137
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	23
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-12D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-03 x10
Date Analyzed:	11/14/24	Data File:	411101-03 x10.053
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	3,700

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-04
Date Analyzed:	11/13/24	Data File:	411101-04.138
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	26
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-17D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-04 x10
Date Analyzed:	11/14/24	Data File:	411101-04 x10.054
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Manganese	2,800

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-19D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/07/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	411101-05
Date Analyzed:	11/13/24	Data File:	411101-05.139
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	14
Lead	<1
Manganese	9.9

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/13/24	Lab ID:	I4-978 mb
Date Analyzed:	11/13/24	Data File:	I4-978 mb.062
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1
Manganese	<1

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101
Date Extracted: 11/12/24
Date Analyzed: 11/13/24

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL SUSPENDED SOLIDS
BY METHOD 2540D**

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-10D-4Q24 411101-01	<5
MW-11D-4Q24 411101 -02	<5
MW-12D-4Q24 411101 -03	40
MW-17D-4Q24 411101 -04	27
MW-19D-4Q24 411101 -05	120
Method Blank I4-0973 MB	<5

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 411062-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,300	1,300	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	70-130

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	100	65-151	4

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 411115-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	<1	104	103	27-164	1
Chloromethane	ug/L (ppb)	10	<10	96	99	34-141	3
Vinyl chloride	ug/L (ppb)	10	<0.02	108	104	16-176	4
Bromomethane	ug/L (ppb)	10	<5	96	91	10-193	5
Chloroethane	ug/L (ppb)	10	<1	116	116	50-150	0
Trichlorofluoromethane	ug/L (ppb)	10	<1	93	97	50-150	4
Acetone	ug/L (ppb)	50	<50	59	55	15-179	7
1,1-Dichloroethene	ug/L (ppb)	10	<1	103	101	50-150	2
Hexane	ug/L (ppb)	10	<5	96	104	49-161	8
Methylene chloride	ug/L (ppb)	10	<5	73	73	40-143	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	107	105	50-150	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	107	103	50-150	4
1,1-Dichloroethane	ug/L (ppb)	10	<1	111	107	50-150	4
2,2-Dichloropropane	ug/L (ppb)	10	<1	91	90	62-152	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	109	105	50-150	4
Chloroform	ug/L (ppb)	10	<1	104	98	50-150	6
2-Butanone (MEK)	ug/L (ppb)	50	<20	89	87	34-168	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	110	107	50-150	3
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	105	102	50-150	3
1,1-Dichloropropene	ug/L (ppb)	10	<1	105	102	50-150	3
Carbon tetrachloride	ug/L (ppb)	10	<0.5	103	100	50-150	3
Benzene	ug/L (ppb)	10	<0.35	110	107	50-150	3
Trichloroethene	ug/L (ppb)	10	<0.5	104	100	43-133	4
1,2-Dichloropropane	ug/L (ppb)	10	<1	102	102	50-150	0
Bromodichloromethane	ug/L (ppb)	10	<0.5	104	103	50-150	1
Dibromomethane	ug/L (ppb)	10	<1	102	100	50-150	2
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	103	50-150	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	96	96	48-145	0
Toluene	ug/L (ppb)	10	<1	108	108	50-150	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	95	91	37-152	4
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	111	110	50-150	1
2-Hexanone	ug/L (ppb)	50	<10	104	103	50-150	1
1,3-Dichloropropane	ug/L (ppb)	10	<1	108	108	50-150	0
Tetrachloroethene	ug/L (ppb)	10	<1	104	103	50-150	1
Dibromochloromethane	ug/L (ppb)	10	<0.5	99	99	33-164	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	107	106	50-150	1
Chlorobenzene	ug/L (ppb)	10	<1	106	104	50-150	2
Ethylbenzene	ug/L (ppb)	10	<1	108	108	50-150	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	105	103	50-150	2
m,p-Xylene	ug/L (ppb)	20	<2	106	107	50-150	1
o-Xylene	ug/L (ppb)	10	<1	107	107	50-150	0
Styrene	ug/L (ppb)	10	<1	101	99	50-150	2
Isopropylbenzene	ug/L (ppb)	10	<1	105	105	50-150	0
Bromoform	ug/L (ppb)	10	<5	99	96	23-161	3
n-Propylbenzene	ug/L (ppb)	10	<1	104	106	50-150	2
Bromobenzene	ug/L (ppb)	10	<1	103	105	50-150	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	102	103	50-150	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	113	111	57-162	2
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	107	107	33-151	0
2-Chlorotoluene	ug/L (ppb)	10	<1	104	103	50-150	1
4-Chlorotoluene	ug/L (ppb)	10	<1	102	102	50-150	0
tert-Butylbenzene	ug/L (ppb)	10	<1	103	104	50-150	1
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	102	102	50-150	0
sec-Butylbenzene	ug/L (ppb)	10	<1	102	102	46-139	0
p-Isopropyltoluene	ug/L (ppb)	10	<1	102	103	46-140	1
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	102	103	50-150	1
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	102	100	50-150	2
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	104	103	50-150	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	94	85	50-150	10
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	95	90	50-150	5
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	93	92	42-150	1
Naphthalene	ug/L (ppb)	10	<1	90	86	50-150	5
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	90	88	44-155	2

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	104	104	49-149	0
Chloromethane	ug/L (ppb)	10	100	100	34-143	0
Vinyl chloride	ug/L (ppb)	10	104	107	43-149	3
Bromomethane	ug/L (ppb)	10	113	104	28-182	8
Chloroethane	ug/L (ppb)	10	112	114	59-157	2
Trichlorofluoromethane	ug/L (ppb)	10	106	99	59-141	7
Acetone	ug/L (ppb)	50	55	65	20-139	17
1,1-Dichloroethene	ug/L (ppb)	10	99	102	67-138	3
Hexane	ug/L (ppb)	10	100	103	50-161	3
Methylene chloride	ug/L (ppb)	10	95	101	29-192	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	105	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	104	106	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	106	108	70-130	2
2,2-Dichloropropane	ug/L (ppb)	10	111	114	71-148	3
cis-1,2-Dichloroethene	ug/L (ppb)	10	105	107	70-130	2
Chloroform	ug/L (ppb)	10	99	103	70-130	4
2-Butanone (MEK)	ug/L (ppb)	50	85	89	50-157	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	105	108	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	101	103	70-130	2
1,1-Dichloropropene	ug/L (ppb)	10	103	106	70-130	3
Carbon tetrachloride	ug/L (ppb)	10	101	103	70-130	2
Benzene	ug/L (ppb)	10	107	109	70-130	2
Trichloroethene	ug/L (ppb)	10	100	103	70-130	3
1,2-Dichloropropane	ug/L (ppb)	10	99	98	70-130	1
Bromodichloromethane	ug/L (ppb)	10	98	102	70-130	4
Dibromomethane	ug/L (ppb)	10	98	99	70-130	1
4-Methyl-2-pentanone	ug/L (ppb)	50	96	101	70-130	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	98	99	70-130	1
Toluene	ug/L (ppb)	10	107	107	70-130	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	96	97	70-130	1
1,1,2-Trichloroethane	ug/L (ppb)	10	108	108	70-130	0
2-Hexanone	ug/L (ppb)	50	98	98	66-132	0
1,3-Dichloropropane	ug/L (ppb)	10	104	103	70-130	1
Tetrachloroethene	ug/L (ppb)	10	105	104	70-130	1
Dibromochloromethane	ug/L (ppb)	10	97	98	63-142	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	105	70-130	1
Chlorobenzene	ug/L (ppb)	10	105	104	70-130	1
Ethylbenzene	ug/L (ppb)	10	107	107	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	101	103	70-130	2
m,p-Xylene	ug/L (ppb)	20	106	106	70-130	0
o-Xylene	ug/L (ppb)	10	106	106	70-130	0
Styrene	ug/L (ppb)	10	101	103	70-130	2
Isopropylbenzene	ug/L (ppb)	10	104	104	70-130	0
Bromoform	ug/L (ppb)	10	96	96	50-157	0
n-Propylbenzene	ug/L (ppb)	10	106	105	70-130	1
Bromobenzene	ug/L (ppb)	10	105	102	70-130	3
1,3,5-Trimethylbenzene	ug/L (ppb)	10	102	102	52-150	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	109	108	75-140	1
1,2,3-Trichloropropane	ug/L (ppb)	10	105	105	40-153	0
2-Chlorotoluene	ug/L (ppb)	10	104	102	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	103	99	70-130	4
tert-Butylbenzene	ug/L (ppb)	10	105	104	70-130	1
1,2,4-Trimethylbenzene	ug/L (ppb)	10	103	103	70-130	0
sec-Butylbenzene	ug/L (ppb)	10	104	104	70-130	0
p-Isopropyltoluene	ug/L (ppb)	10	105	105	70-130	0
1,3-Dichlorobenzene	ug/L (ppb)	10	104	103	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	103	102	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	104	105	70-130	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	93	94	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	93	97	70-130	4
Hexachlorobutadiene	ug/L (ppb)	10	101	102	70-130	1
Naphthalene	ug/L (ppb)	10	87	92	61-133	6
1,2,3-Trichlorobenzene	ug/L (ppb)	10	89	93	69-143	4

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 411115-01 1/0.25 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	<0.05	59	54	50-150	9
2-Methylnaphthalene	ug/L (ppb)	10	<0.05	64	62	29-118	3
1-Methylnaphthalene	ug/L (ppb)	10	<0.05	64	63	10-174	2
Acenaphthylene	ug/L (ppb)	10	<0.005	72	66	50-150	9
Acenaphthene	ug/L (ppb)	10	<0.005	73	73	21-127	0
Fluorene	ug/L (ppb)	10	<0.005	81	80	50-150	1
Phenanthrene	ug/L (ppb)	10	0.012	81	80	50-150	1
Anthracene	ug/L (ppb)	10	<0.005	86	80	50-150	7
Fluoranthene	ug/L (ppb)	10	0.0058	75	74	50-150	1
Pyrene	ug/L (ppb)	10	0.0072	105	110	50-150	5
Benz(a)anthracene	ug/L (ppb)	10	<0.005	82	84	50-150	2
Chrysene	ug/L (ppb)	10	<0.005	88	86	50-150	2
Benzo(a)pyrene	ug/L (ppb)	10	<0.005	93	91	50-150	2
Benzo(b)fluoranthene	ug/L (ppb)	10	<0.005	92	102	50-150	10
Benzo(k)fluoranthene	ug/L (ppb)	10	<0.005	118	114	50-150	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	<0.005	75	63	37-129	17
Dibenz(a,h)anthracene	ug/L (ppb)	10	<0.005	61	52	33-134	16
Benzo(g,h,i)perylene	ug/L (ppb)	10	<1	53	44	19-140	19

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	64	69	58-93	8
2-Methylnaphthalene	ug/L (ppb)	10	65	72	63-97	10
1-Methylnaphthalene	ug/L (ppb)	10	67	72	62-99	7
Acenaphthylene	ug/L (ppb)	10	82	87	68-111	6
Acenaphthene	ug/L (ppb)	10	81	87	67-104	7
Fluorene	ug/L (ppb)	10	90	93	70-130	3
Phenanthrene	ug/L (ppb)	10	91	91	70-130	0
Anthracene	ug/L (ppb)	10	92	94	70-130	2
Fluoranthene	ug/L (ppb)	10	89	88	70-130	1
Pyrene	ug/L (ppb)	10	86	85	70-130	1
Benz(a)anthracene	ug/L (ppb)	10	88	90	70-130	2
Chrysene	ug/L (ppb)	10	92	94	70-130	2
Benzo(a)pyrene	ug/L (ppb)	10	93	94	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	10	92	91	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	10	96	95	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	89	97	70-130	9
Dibenz(a,h)anthracene	ug/L (ppb)	10	92	99	70-130	7
Benzo(g,h,i)perylene	ug/L (ppb)	10	83	91	68-131	9

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 411072-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	20.5	74 b	85 b	75-125	14 b
Lead	ug/L (ppb)	10	<1	109	111	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	80-120
Lead	ug/L (ppb)	10	96	80-120

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 411186-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	42.5	71 b	80 b	75-125	12 b
Lead	ug/L (ppb)	10	<10	95	97	75-125	2
Manganese	ug/L (ppb)	10	6,620	0 b	0 b	75-125	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Lead	ug/L (ppb)	10	95	80-120
Manganese	ug/L (ppb)	10	97	80-120

Date of Report: 11/19/24
Date Received: 11/07/24
Project: Whidbey Marine PO 0204475-001, F&BI 411101

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 411153-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	42	43	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

411101

SAMPLE CHAIN OF CUSTODY

11/06/24

F2/K5/VW3

Page # 1 of 1

Report To H. Good, V. Pehlivan

Company HSA

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*) NP 11-07-24

PROJECT NAME: Whidbey Marine

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	~~MTBE BTEX EDB EDC 8021~~	~~NWTPH-HCID~~ TS	VOCs EPA 8260	PAHs EPA 8270	~~Tot/Dis As+Pb PCBs EPA 8082~~	Nitrate, nitrite, Chloride, sulfate	Gamma 9, alkalinity, Sulfide	TOC	D.S. ferrous Mn	Notes
MW-10D-4Q24	01A-Q	11/6/24	1200	H_2O	17	X	X	X	X	X	X	X	X	X	X	X	
MW-11D-4Q24	02	↓	1325	↓	17	X	X	X	X	X	X	X	X	X	X	X	
MW-12D-4Q24	03	↓	1100	↓	17	X	X	X	X	X	X	X	X	X	X	X	
MW-17D-4Q24	04	↓	1415	↓	17	X	X	X	X	X	X	X	X	X	X	X	
MW-19D-4Q24	05A-K	↓	1025	↓	11	X	X		X	X	X	X					
										Samples received at 2 °C							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Nakahara	HA	11/7/24 11/6/24	0805
Received by:	Eric Lam	EAB	11/7/24 11/6/24	0910
Relinquished by:				
Received by:				

DATE UPDATED 11/7

Friedman & Bruya, Inc.
Ph. (206) 285-8282

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 411101 CLIENT HNA INITIALS/ DATE: 11/07/24 AP

If custody seals are present on cooler, are they intact? ☐ NA ☑ YES ☐ NO

Cooler/Sample temperature 2 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☐ Over the Counter ☑ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO Initials/ Date: AP 11/07/24
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☑ Yes ☐ No	☐ Not on COC/label
Date Sampled	☑ Yes ☐ No	☐ Not on COC/label
Time Sampled	☑ Yes ☐ No	☐ Not on COC/label
# of Containers	☑ Yes ☐ No	
Relinquished	☑ Yes ☐ No	
Requested analysis	☑ Yes ☐ On Hold	

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☑ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ **Number of unused TO17 tubes** _____

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 411101,
Work Order Number: 2411130

November 14, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 4 sample(s) on 11/7/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by EPA 310.2
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *11/14/2024*

CLIENT: Friedman & Bruya
Project: 411101
Work Order: 2411130

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2411130-001	MW-10D-4Q24	11/06/2024 12:00 PM	11/07/2024 10:51 AM
2411130-002	MW-11D-4Q24	11/06/2024 1:25 PM	11/07/2024 10:51 AM
2411130-003	MW-12D-4Q24	11/06/2024 11:00 AM	11/07/2024 10:51 AM
2411130-004	MW-17D-4Q24	11/06/2024 2:15 PM	11/07/2024 10:51 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2411130**

Date: **11/14/2024**

CLIENT: Friedman & Bruya
Project: 411101

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2411130**
Date Reported: **11/14/2024**

CLIENT: Friedman & Bruya
Project: 411101

Lab ID: 2411130-001 **Collection Date:** 11/6/2024 12:00:00 PM
Client Sample ID: **MW-10D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.00702	0.00500		mg/L	1	11/12/2024 2:31:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:31:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:31:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	18.2	2.00	D	mg/L	10	11/8/2024 8:01:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	11/8/2024 3:55:00 AM
Nitrate (as N)	3.60	0.200		mg/L	1	11/8/2024 3:55:00 AM
Sulfate	15.7	10.0	D	mg/L	10	11/8/2024 8:01:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	0.943	0.700		mg/L	1	11/11/2024 7:07:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	81.5	12.5	D	mg/L	5	11/11/2024 4:02:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 11:59:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Analytical Report

Work Order: **2411130**
Date Reported: **11/14/2024**

CLIENT: Friedman & Bruya
Project: 411101

Lab ID: 2411130-002 **Collection Date:** 11/6/2024 1:25:00 PM
Client Sample ID: **MW-11D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	ND	0.00500		mg/L	1	11/12/2024 2:33:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:33:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:33:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	20.7	2.00	D	mg/L	10	11/8/2024 8:24:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	11/8/2024 5:04:00 AM
Nitrate (as N)	1.64	0.200		mg/L	1	11/8/2024 5:04:00 AM
Sulfate	14.2	10.0	D	mg/L	10	11/8/2024 8:24:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	1.44	0.700		mg/L	1	11/11/2024 7:28:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	39.6	5.00	D	mg/L	2	11/11/2024 3:43:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 12:04:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Analytical Report

Work Order: **2411130**
Date Reported: **11/14/2024**

CLIENT: Friedman & Bruya
Project: 411101

Lab ID: 2411130-003 **Collection Date:** 11/6/2024 11:00:00 AM
Client Sample ID: **MW-12D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	ND	0.00500		mg/L	1	11/12/2024 2:35:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:35:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:35:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	12.3	2.00	D	mg/L	10	11/8/2024 8:47:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	11/8/2024 5:27:00 AM
Nitrate (as N)	ND	0.200		mg/L	1	11/8/2024 5:27:00 AM
Sulfate	2.08	1.00		mg/L	1	11/11/2024 5:14:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	10.8	0.700		mg/L	1	11/11/2024 8:00:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	279	25.0	D	mg/L	10	11/11/2024 3:46:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 12:09:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Analytical Report

Work Order: **2411130**
Date Reported: **11/14/2024**

CLIENT: Friedman & Bruya
Project: 411101

Lab ID: 2411130-004 **Collection Date:** 11/6/2024 2:15:00 PM
Client Sample ID: **MW-17D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.838	0.0250	D	mg/L	5	11/12/2024 2:52:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:40:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:40:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	35.0	2.00	D	mg/L	10	11/8/2024 9:57:00 PM
Nitrite (as N)	ND	0.200		mg/L	1	11/8/2024 5:50:00 AM
Nitrate (as N)	ND	0.200		mg/L	1	11/8/2024 5:50:00 AM
Sulfate	10.5	10.0	D	mg/L	10	11/8/2024 9:57:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	1.74	0.700		mg/L	1	11/11/2024 9:17:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	179	25.0	D	mg/L	10	11/11/2024 3:48:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45805		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/8/2024 1:10:00 PM
Total Sulfide by SM 4500-S2-D				Batch ID: R95600		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:41:46 AM

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-95619**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95619**		
Client ID: **MBLKW**	Batch ID: **R95619**					Analysis Date: **11/11/2024**		SeqNo: **1996046**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-95619**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95619**		
Client ID: **LCSW**	Batch ID: **R95619**					Analysis Date: **11/11/2024**		SeqNo: **1996047**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	26.2	2.50	25.00	0	105	83.8	121				

Sample ID: **2411094-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95619**		
Client ID: **BATCH**	Batch ID: **R95619**					Analysis Date: **11/11/2024**		SeqNo: **1996049**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	44.9	2.50						46.00	2.42	20	

Sample ID: **2411119-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95619**		
Client ID: **BATCH**	Batch ID: **R95619**					Analysis Date: **11/11/2024**		SeqNo: **1996059**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	67.7	2.50						68.60	1.32	20	E

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-45805**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/8/2024**		RunNo: **95592**		
Client ID: **MBLKW**	Batch ID: **45805**					Analysis Date: **11/8/2024**		SeqNo: **1994856**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-45805**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/8/2024**		RunNo: **95592**		
Client ID: **LCSW**	Batch ID: **45805**					Analysis Date: **11/8/2024**		SeqNo: **1994857**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.445	0.150	0.5000	0	89.0	81.7	122				

Sample ID: **2411119-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/8/2024**		RunNo: **95592**		
Client ID: **BATCH**	Batch ID: **45805**					Analysis Date: **11/8/2024**		SeqNo: **1994859**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2411119-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/8/2024**		RunNo: **95592**		
Client ID: **BATCH**	Batch ID: **45805**					Analysis Date: **11/8/2024**		SeqNo: **1994860**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2411119-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/8/2024**		RunNo: **95592**		
Client ID: **BATCH**	Batch ID: **45805**					Analysis Date: **11/8/2024**		SeqNo: **1994861**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138	0		30	S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-45790**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/7/2024**	RunNo: **95604**
Client ID: **MBLKW**	Batch ID: **45790**		Analysis Date: **11/7/2024**	SeqNo: **1995162**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2411102-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/7/2024**	RunNo: **95604**
Client ID: **BATCH**	Batch ID: **45790**		Analysis Date: **11/8/2024**	SeqNo: **1995169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	7.67	0.200						7.706	0.468	20	E
Nitrite (as N)	ND	0.200						0		20	H
Nitrate (as N)	0.578	0.200						0.5830	0.861	20	H
Sulfate	7.82	1.00						7.770	0.680	20	

Sample ID: **2411102-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **11/7/2024**	RunNo: **95604**
Client ID: **BATCH**	Batch ID: **45790**		Analysis Date: **11/8/2024**	SeqNo: **1995170**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.31	0.200	0.7500	7.706	80.8	80	120				E
Nitrite (as N)	0.749	0.200	0.7500	0	99.9	80	120				H
Nitrate (as N)	1.38	0.200	0.7500	0.5830	106	80	120				H
Sulfate	11.5	1.00	3.750	7.770	99.4	80	120				

Sample ID: **2411102-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **11/7/2024**	RunNo: **95604**
Client ID: **BATCH**	Batch ID: **45790**		Analysis Date: **11/8/2024**	SeqNo: **1995171**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.33	0.200	0.7500	7.706	83.7	80	120	8.312	0.264	20	E
Nitrite (as N)	0.753	0.200	0.7500	0	100	80	120	0.7490	0.533	20	H
Nitrate (as N)	1.39	0.200	0.7500	0.5830	107	80	120	1.377	0.796	20	H

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2411102-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995171**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	11.6	1.00	3.750	7.770	101	80	120	11.50	0.581	20	

Sample ID: **2411130-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **MW-10D-4Q24** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995205**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	14.9	0.200						14.93	0.0536	20	E
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	3.60	0.200						3.599	0.0556	20	
Sulfate	16.3	1.00						16.31	0.245	20	

Sample ID: **2411130-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **MW-10D-4Q24** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995206**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	15.4	0.200	0.7500	14.93	64.9	80	120				ES
Nitrite (as N)	0.757	0.200	0.7500	0	101	80	120				
Nitrate (as N)	4.35	0.200	0.7500	3.599	99.9	80	120				
Sulfate	20.1	1.00	3.750	16.31	101	80	120				

NOTES:
S - Outlying spike recoveries were associated with this sample.

Sample ID: **LCS-45790** SampType: **LCS** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95604**
Client ID: **LCSW** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995182**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.740	0.200	0.7500	0	98.7	90	110				
Nitrite (as N)	0.719	0.200	0.7500	0	95.9	90	110				
Nitrate (as N)	0.738	0.200	0.7500	0	98.4	90	110				
Sulfate	3.67	1.00	3.750	0	97.8	90	110				

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R95600**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **MBLKW**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995054**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R95600**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **LCSW**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995055**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.201	0.0500	0.2000	0	101	80	120				

Sample ID: **2411119-001CDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **BATCH**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995057**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500						0		20	

Sample ID: **2411119-001CMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **BATCH**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995058**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.195	0.0500	0.2000	0.02592	84.5	80	120				

Sample ID: **2411119-001CMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95600**		
Client ID: **BATCH**	Batch ID: **R95600**					Analysis Date: **11/11/2024**		SeqNo: **1995059**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.191	0.0500	0.2000	0.02592	82.6	80	120	0.1948	1.93	20	

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R95639**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **MBLKW**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995924**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R95639**	SampType: **LCS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **LCSW**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995925**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	26.2	0.700	25.00	0	105	87.6	109				

Sample ID: **2411119-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995927**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.69	0.700						1.666	1.19	20	

Sample ID: **2411119-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995928**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.0	0.700	25.00	1.666	101	73.1	113				

Sample ID: **2411119-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**		
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995929**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.3	0.700	25.00	1.666	102	73.1	113	26.97	1.09	30	

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2411179-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**			
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995917**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.60	0.700						4.801	4.38	20	

Sample ID: **2411179-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**			
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995918**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	29.7	0.700	25.00	4.801	99.6	73.1	113				

Work Order: 2411130
CLIENT: Friedman & Bruya
Project: 411101

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R95662** SampType: **LCS** Units: **ppmv** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **LCSW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,080	0.00500	1,000	0	108	73.6	124				
Ethene	1,020	0.0100	1,000	0	102	76.3	122				
Ethane	1,020	0.0100	1,000	0	102	76.1	123				

Sample ID: **MB-R95662** SampType: **MBLK** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **MBLKW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996435**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2411119-001DREP** SampType: **REP** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **BATCH** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996421**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2411130
Logged by:	Clare Griggs	Date Received:	11/7/2024 10:51:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	5.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2411130

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 5500 4th Ave S

City, State, ZIP Seattle, WA 98108

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Alliance Techincal Group

PROJECT NAME/NO.	PO #
411101	E-501

REMARKS

EIM and EQuIS

TURNAROUND TIME
☒ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Anions	Sulfide	RSK MEE	ammonia	alkalinity	TOC					Notes
MW-10D-4Q24		11/6/2024	1200	water	6	x	x	x	x	x	x					Anions= nitrate,
MW-11D-4Q24		11/6/2024	1325	water	6	x	x	x	x	x	x					nitrite, sulfate,
MW-12D-4Q24		11/6/2024	1100	water	6	x	x	x	x	x	x					chloride
MW-17D-4Q24		11/6/2024	1415	water	6	x	x	x	x	x	x					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	11/7/24	0951
Received by:		Nathan Keller	ATL	11/7/24	1051
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Ave South
Seattle, WA 98108-2419
(206) 285-8282
office@friedmanandbruya.com
www.friedmanandbruya.com

November 19, 2024

Heather Good, Project Manager
Haley & Aldrich, Inc
3131 Elliott Ave, Suite 600
Seattle, WA 98121

Dear Ms Good:

Included are the results from the testing of material submitted on November 8, 2024 from the Whidbey Marine PO 0204475-001, F&BI 411132 project. There are 40 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Haley Aldrich Data, Victoria Pehlivan
HNA1119R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 8, 2024 by Friedman & Bruya, Inc. from the Haley & Aldrich, Inc Whidbey Marine PO 0204475-001, F&BI 411132 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Haley & Aldrich, Inc
411132 -01	MW-20D-4Q24
411132 -02	MW-22D-4Q24
411132 -03	MW-23D-4Q24
411132 -04	MW-9D-4Q24
411132 -05	FD-01-4Q24
411132 -06	Trip Blank

Samples MW-23D-4Q24, MW-9D-4Q24, and FD-01-4Q24 were sent to Alliance Technical Group for nitrate, nitrite, chloride, sulfate, ammonia, alkalinity, sulfide, dissolved gases, and TOC analyses. The report is enclosed.

The 8260D calibration standard exceeded the acceptance criteria for 2,2-dichloropropane. The compound was not detected, therefore this did not represent an out of control condition, and were qualified with a "k" qualifier. The results are not considered estimates.

The 8260D laboratory control sample and laboratory control sample duplicate did not meet the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable.

The dissolved metals samples were filtered at Friedman and Bruya. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132
Date Extracted: 11/11/24
Date Analyzed: 11/12/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-20D-4Q24 411132-01	<100	105
MW-22D-4Q24 411132-02	<100	110
MW-23D-4Q24 411132-03 1/40	59,000	106
MW-9D-4Q24 411132-04 1/20	73,000	107
FD-01-4Q24 411132-05 1/20	67,000	115
Method Blank 04-2706 MB	<100	107

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132
Date Extracted: 11/13/24
Date Analyzed: 11/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-150)
MW-20D-4Q24 411132-01	93 x	<250	95
MW-22D-4Q24 411132-02	<50	<250	85
MW-23D-4Q24 411132-03	4,500 x	<250	101
MW-9D-4Q24 411132-04	3,300 x	<250	85
FD-01-4Q24 411132-05 1/1.2	3,100 x	<300	79
Method Blank 04-2805 MB2	<50	<250	96

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-20D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-01
Date Analyzed:	11/15/24	Data File:	111507.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	78	126
Toluene-d8	101	84	115
4-Bromofluorobenzene	103	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1.5
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	5.2
Hexane	<5	o-Xylene	1.9
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 k	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	3.4	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-22D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-02
Date Analyzed:	11/15/24	Data File:	111508.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	89	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	2.7
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	6.2
Hexane	<5	o-Xylene	2.4
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 k	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-23D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-03 1/100
Date Analyzed:	11/15/24	Data File:	111511.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	78	126
Toluene-d8	100	84	115
4-Bromofluorobenzene	97	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	1,800
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	6,000
Hexane	<500	o-Xylene	1,400
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	100
2,2-Dichloropropane	<100 k	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	310
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	680
Benzene	11	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	14,000	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	470
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-9D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-04 1/100
Date Analyzed:	11/15/24	Data File:	111509.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	78	126
Toluene-d8	97	84	115
4-Bromofluorobenzene	96	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	3,600
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	13,000
Hexane	<500	o-Xylene	6,300
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	220
2,2-Dichloropropane	<100 k	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	580
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,200
Benzene	<3.5	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	2,300	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	660
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	FD-01-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-05 1/100
Date Analyzed:	11/15/24	Data File:	111510.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	96	84	115
4-Bromofluorobenzene	95	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<2	Dibromochloromethane	<50
Bromomethane	<500	1,2-Dibromoethane (EDB)	<1
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	3,400
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	12,000
Hexane	<500	o-Xylene	5,800
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<500
1,1-Dichloroethane	<100	n-Propylbenzene	220
2,2-Dichloropropane	<100 k	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	580
Chloroform	<100	1,1,2,2-Tetrachloroethane	<20
2-Butanone (MEK)	<2,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<20	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	<100
Carbon tetrachloride	<50	1,2,4-Trimethylbenzene	2,200
Benzene	<3.5	sec-Butylbenzene	<100
Trichloroethene	<50	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<50	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<40	1,2,4-Trichlorobenzene	<100
Toluene	2,200	Hexachlorobutadiene	<50
trans-1,3-Dichloropropene	<40	Naphthalene	730
1,1,2-Trichloroethane	<50	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	04-2786 mb
Date Analyzed:	11/15/24	Data File:	111508.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	84	68	139
4-Bromofluorobenzene	92	62	136

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.01
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 k	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 k	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20 k	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.035	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-20D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-01
Date Analyzed:	11/12/24	Data File:	111135.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	107 ca	15	144
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	94 ca	10	142
Terphenyl-d14	82	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.47
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-02
Date Analyzed:	11/12/24	Data File:	111136.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	112 ca	15	144
2-Fluorobiphenyl	82	25	128
2,4,6-Tribromophenol	108 ca	10	142
Terphenyl-d14	90	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.32
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	0.021
Anthracene	<0.02
Fluoranthene	0.029
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-03
Date Analyzed:	11/12/24	Data File:	111137.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	108 ca	15	144
2-Fluorobiphenyl	71	25	128
2,4,6-Tribromophenol	123 ca	10	142
Terphenyl-d14	76	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	240 ve
2-Methylnaphthalene	57
1-Methylnaphthalene	27
Acenaphthylene	<0.02
Acenaphthene	0.12
Fluorene	0.15
Phenanthrene	0.13
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-03 1/20
Date Analyzed:	11/13/24	Data File:	111238.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68 d	15	144
2-Fluorobiphenyl	70 d	25	128
2,4,6-Tribromophenol	96 d	10	142
Terphenyl-d14	68 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	240

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-04
Date Analyzed:	11/12/24	Data File:	111138.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	109 ca	15	144
2-Fluorobiphenyl	67	25	128
2,4,6-Tribromophenol	112 ca	10	142
Terphenyl-d14	74	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	340 ve
2-Methylnaphthalene	90 ve
1-Methylnaphthalene	47
Acenaphthylene	<0.02
Acenaphthene	0.23
Fluorene	0.23
Phenanthrene	0.25
Anthracene	0.098
Fluoranthene	0.030
Pyrene	0.039
Benz(a)anthracene	0.035
Chrysene	<0.02
Benzo(a)pyrene	0.025
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.041

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-9D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-04 1/20
Date Analyzed:	11/13/24	Data File:	111239.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	66 d	15	144
2-Fluorobiphenyl	60 d	25	128
2,4,6-Tribromophenol	80 d	10	142
Terphenyl-d14	64 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	370
2-Methylnaphthalene	89

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-05
Date Analyzed:	11/12/24	Data File:	111139.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	119 ca	15	144
2-Fluorobiphenyl	73	25	128
2,4,6-Tribromophenol	128 ca	10	142
Terphenyl-d14	85	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	390 ve
2-Methylnaphthalene	100 ve
1-Methylnaphthalene	54
Acenaphthylene	<0.02
Acenaphthene	0.24
Fluorene	0.27
Phenanthrene	0.27
Anthracene	0.11
Fluoranthene	0.027
Pyrene	0.041
Benz(a)anthracene	0.035
Chrysene	<0.02
Benzo(a)pyrene	0.025
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	0.041

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	FD-01-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	411132-05 1/20
Date Analyzed:	11/13/24	Data File:	111240.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	68 d	15	144
2-Fluorobiphenyl	68 d	25	128
2,4,6-Tribromophenol	93 d	10	142
Terphenyl-d14	72 d	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	420
2-Methylnaphthalene	100

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	Not Applicable	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/11/24	Lab ID:	04-2800 mb
Date Analyzed:	11/11/24	Data File:	111114.D
Matrix:	Water	Instrument:	GCMS12
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Nitrobenzene-d5	79	11	173
2-Fluorobiphenyl	79	25	128
2,4,6-Tribromophenol	96	10	140
Terphenyl-d14	82	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Acenaphthylene	<0.02
Acenaphthene	<0.02
Fluorene	<0.02
Phenanthrene	<0.02
Anthracene	<0.02
Fluoranthene	<0.02
Pyrene	<0.02
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02
Benzo(g,h,i)perylene	<0.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-01
Date Analyzed:	11/15/24	Data File:	411132-01.254
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	5.8
Lead	1.7

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-22D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-02
Date Analyzed:	11/15/24	Data File:	411132-02.255
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.2
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-03
Date Analyzed:	11/15/24	Data File:	411132-03.256
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22
Lead	3.3

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-9D-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-04
Date Analyzed:	11/16/24	Data File:	411132-04.257
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	22
Lead	3.0

Analysis For Total Metals By EPA Method 6020B

Client ID:	FD-01-4Q24	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	411132-05
Date Analyzed:	11/16/24	Data File:	411132-05.258
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	23
Lead	3.1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/15/24	Lab ID:	I4-988 mb
Date Analyzed:	11/15/24	Data File:	I4-988 mb.063
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-20D-4Q24 f	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	411132-01
Date Analyzed:	11/14/24	Data File:	411132-01.117
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.5
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-22D-4Q24 f	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	411132-02
Date Analyzed:	11/14/24	Data File:	411132-02.120
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-23D-4Q24 f	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	411132-03
Date Analyzed:	11/14/24	Data File:	411132-03.121
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	8.7
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-9D-4Q24 f	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	411132-04
Date Analyzed:	11/14/24	Data File:	411132-04.122
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.5
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	FD-01-4Q24 f	Client:	Haley & Aldrich, Inc
Date Received:	11/08/24	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	411132-05
Date Analyzed:	11/14/24	Data File:	411132-05.123
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.4
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Haley & Aldrich, Inc
Date Received:	NA	Project:	Whidbey Marine PO 0204475-001
Date Extracted:	11/14/24	Lab ID:	I4-983 mb
Date Analyzed:	11/14/24	Data File:	I4-983 mb.113
Matrix:	Water	Instrument:	ICPMS3
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132
Date Extracted: 11/12/24
Date Analyzed: 11/13/24

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
MW-20D-4Q24 411132-01	110
MW-22D-4Q24 411132 -02	<5
MW-23D-4Q24 411132 -03	98
MW-9D-4Q24 411132 -04	10
FD-01-4Q24 411132 -05	8.1
Method Blank I4-0973 MB	<5

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 411097-11 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	98	70-130

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	96	65-151	0

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 411158-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	109	27-164
Chloromethane	ug/L (ppb)	10	<10	102	34-141
Vinyl chloride	ug/L (ppb)	10	<0.02	108	16-176
Bromomethane	ug/L (ppb)	10	<5	112	10-193
Chloroethane	ug/L (ppb)	10	<1	114	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	111	50-150
Acetone	ug/L (ppb)	50	<50	57	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	101	50-150
Hexane	ug/L (ppb)	10	<5	107	49-161
Methylene chloride	ug/L (ppb)	10	<5	70	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	105	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	106	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	107	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	116	62-152
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	106	50-150
Chloroform	ug/L (ppb)	10	<1	98	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	91	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	108	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	103	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	106	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	103	50-150
Benzene	ug/L (ppb)	10	<0.35	108	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	103	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	100	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	103	50-150
Dibromomethane	ug/L (ppb)	10	<1	100	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	102	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	101	48-145
Toluene	ug/L (ppb)	10	<1	106	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	96	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	110	50-150
2-Hexanone	ug/L (ppb)	50	<10	105	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	104	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	104	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<0.01	106	50-150
Chlorobenzene	ug/L (ppb)	10	<1	104	50-150
Ethylbenzene	ug/L (ppb)	10	<1	108	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	101	50-150
m,p-Xylene	ug/L (ppb)	20	<2	107	50-150
o-Xylene	ug/L (ppb)	10	<1	106	50-150
Styrene	ug/L (ppb)	10	<1	102	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	105	50-150
Bromoform	ug/L (ppb)	10	<5	97	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	105	50-150
Bromobenzene	ug/L (ppb)	10	<1	103	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	101	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	114	57-162
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	106	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	103	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	102	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	104	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	104	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	104	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	106	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	105	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	104	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	100	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	104	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	105	42-150
Naphthalene	ug/L (ppb)	10	<1	100	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	99	44-155

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	92	113	49-149	20
Chloromethane	ug/L (ppb)	10	91	105	34-143	14
Vinyl chloride	ug/L (ppb)	10	93	112	43-149	19
Bromomethane	ug/L (ppb)	10	87	119	28-182	31 vo
Chloroethane	ug/L (ppb)	10	99	119	59-157	18
Trichlorofluoromethane	ug/L (ppb)	10	81	111	59-141	31 vo
Acetone	ug/L (ppb)	50	48	58	20-139	19
1,1-Dichloroethene	ug/L (ppb)	10	88	104	67-138	17
Hexane	ug/L (ppb)	10	89	103	50-161	15
Methylene chloride	ug/L (ppb)	10	81	80	29-192	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	90	106	70-130	16
trans-1,2-Dichloroethene	ug/L (ppb)	10	92	108	70-130	16
1,1-Dichloroethane	ug/L (ppb)	10	93	109	70-130	16
2,2-Dichloropropane	ug/L (ppb)	10	103	123	71-148	18
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	110	70-130	17
Chloroform	ug/L (ppb)	10	85	104	70-130	20
2-Butanone (MEK)	ug/L (ppb)	50	67	78	50-157	15
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	93	108	70-130	15
1,1,1-Trichloroethane	ug/L (ppb)	10	88	105	70-130	18
1,1-Dichloropropene	ug/L (ppb)	10	89	108	70-130	19
Carbon tetrachloride	ug/L (ppb)	10	88	103	70-130	16
Benzene	ug/L (ppb)	10	93	110	70-130	17
Trichloroethene	ug/L (ppb)	10	89	105	70-130	16
1,2-Dichloropropane	ug/L (ppb)	10	87	100	70-130	14
Bromodichloromethane	ug/L (ppb)	10	86	102	70-130	17
Dibromomethane	ug/L (ppb)	10	87	104	70-130	18
4-Methyl-2-pentanone	ug/L (ppb)	50	80	93	70-130	15
cis-1,3-Dichloropropene	ug/L (ppb)	10	87	100	70-130	14
Toluene	ug/L (ppb)	10	101	109	70-130	8
trans-1,3-Dichloropropene	ug/L (ppb)	10	93	99	70-130	6
1,1,2-Trichloroethane	ug/L (ppb)	10	102	109	70-130	7
2-Hexanone	ug/L (ppb)	50	83	88	66-132	6
1,3-Dichloropropane	ug/L (ppb)	10	98	106	70-130	8
Tetrachloroethene	ug/L (ppb)	10	99	107	70-130	8
Dibromochloromethane	ug/L (ppb)	10	97	104	63-142	7
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	106	70-130	8
Chlorobenzene	ug/L (ppb)	10	97	105	70-130	8
Ethylbenzene	ug/L (ppb)	10	100	109	70-130	9
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	94	105	70-130	11
m,p-Xylene	ug/L (ppb)	20	99	108	70-130	9
o-Xylene	ug/L (ppb)	10	99	108	70-130	9
Styrene	ug/L (ppb)	10	92	101	70-130	9
Isopropylbenzene	ug/L (ppb)	10	97	107	70-130	10
Bromoform	ug/L (ppb)	10	89	95	50-157	7
n-Propylbenzene	ug/L (ppb)	10	99	108	70-130	9
Bromobenzene	ug/L (ppb)	10	96	104	70-130	8
1,3,5-Trimethylbenzene	ug/L (ppb)	10	96	105	52-150	9
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	102	111	75-140	8
1,2,3-Trichloropropane	ug/L (ppb)	10	97	105	40-153	8
2-Chlorotoluene	ug/L (ppb)	10	99	106	70-130	7
4-Chlorotoluene	ug/L (ppb)	10	97	103	70-130	6
tert-Butylbenzene	ug/L (ppb)	10	95	107	70-130	12
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	104	70-130	9
sec-Butylbenzene	ug/L (ppb)	10	98	106	70-130	8
p-Isopropyltoluene	ug/L (ppb)	10	98	106	70-130	8
1,3-Dichlorobenzene	ug/L (ppb)	10	97	104	70-130	7
1,4-Dichlorobenzene	ug/L (ppb)	10	95	103	70-130	8
1,2-Dichlorobenzene	ug/L (ppb)	10	96	106	70-130	10
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	91	97	70-130	6
1,2,4-Trichlorobenzene	ug/L (ppb)	10	91	99	70-130	8
Hexachlorobutadiene	ug/L (ppb)	10	97	106	70-130	9
Naphthalene	ug/L (ppb)	10	86	92	61-133	7
1,2,3-Trichlorobenzene	ug/L (ppb)	10	88	94	69-143	7

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	10	70	65	58-93	7
2-Methylnaphthalene	ug/L (ppb)	10	72	69	63-97	4
1-Methylnaphthalene	ug/L (ppb)	10	72	70	62-99	3
Acenaphthylene	ug/L (ppb)	10	83	83	68-111	0
Acenaphthene	ug/L (ppb)	10	83	83	67-104	0
Fluorene	ug/L (ppb)	10	90	88	70-130	2
Phenanthrene	ug/L (ppb)	10	90	90	70-130	0
Anthracene	ug/L (ppb)	10	89	91	70-130	2
Fluoranthene	ug/L (ppb)	10	88	89	70-130	1
Pyrene	ug/L (ppb)	10	87	85	70-130	2
Benz(a)anthracene	ug/L (ppb)	10	88	89	70-130	1
Chrysene	ug/L (ppb)	10	92	93	70-130	1
Benzo(a)pyrene	ug/L (ppb)	10	92	94	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	10	97	96	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	10	93	93	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	88	98	70-130	11
Dibenz(a,h)anthracene	ug/L (ppb)	10	92	95	70-130	3
Benzo(g,h,i)perylene	ug/L (ppb)	10	83	87	68-131	5

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 411132-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	22.8	107 b	124 b	75-125	15 b
Lead	ug/L (ppb)	10	3.05	94 b	98 b	75-125	4 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	99	80-120
Lead	ug/L (ppb)	10	97	80-120

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 411132-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	2.53	96 b	94 b	75-125	2 b
Lead	ug/L (ppb)	10	<1	96	95	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Lead	ug/L (ppb)	10	95	80-120

Date of Report: 11/19/24
Date Received: 11/08/24
Project: Whidbey Marine PO 0204475-001, F&BI 411132

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: 411153-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
TSS	mg/L (ppm)	42	43	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
TSS	mg/L (ppm)	20	96	35-146

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

411132

SAMPLE CHAIN OF CUSTODY 11/08/24 F4/K4/VW2

Page # 1 of 1

Report To Heather Good

Company H&A

Address

City, State, ZIP

Phone Email Hgood@haleyaldrich.com

SAMPLERS (*signature*)

PROJECT NAME: Whidbey Marina

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	~~anions & Alk BTEX EPA 8021~~	~~Ammonia NWTPH HCID~~	VOCs EPA 8260	PAHs EPA 8270	~~Sulfide PCB, EPA 8082~~	EDB, EDC, MTBE	total + dissolved lead & Arsenic	TSS	MEE	TOC + Diss Mn per table from AP 11/04	Notes
MW-20D-4Q24	01 A-K	11/7/24	1335	W	11	X	X			X	X		X	X	X			Nitrate short hold time
MW-22D-4Q24	02	↓	1220	↓	11	↓	↓			↓	↓		↓	↓	↓			
MW-23D-4Q24	03 A-Q		1105		17			X	X			X				X		⊗
MW-9D-4Q24	04		0910		17			X	X			X				X		⊗
FD-01-4Q24	05	↓	1000	↓	17	↓	↓	X	X	↓	↓	X	↓	↓	↓	X		⊗
Trip Blank	06 A-B	–	–	Water	2													Added at lab AP 11/08
																		Dissolved mang. & iron for 9D, 23D, & FD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Zach Stephens	H&A	11/8/24	0945
Received by:	Anh Phan	FBI	11/08/24	09:45
Relinquished by:		Samples received at 2 °C		
Received by:				

Friedman & Bruya, Inc.
5500 4th Ave S.
Seattle WA 98108
(206) 285-8282
office@friedmanandbruya.com

SAMPLE CONDITION UPON RECEIPT CHECKLIST

PROJECT # 411132 CLIENT HNA INITIALS/ DATE: AP 11/08/24

If custody seals are present on cooler, are they intact? ☑ NA ☐ YES ☐ NO

Cooler/Sample temperature 2 °C
Thermometer ID: Fluke 96312917

Were samples received on ice/cold packs? ☑ YES ☐ NO

How did samples arrive?
☑ Over the Counter ☐ Picked up by F&BI ☐ FedEx/UPS/GSO

Is there a Chain-of-Custody* (COC)? ☑ YES ☐ NO Initials/ Date: AP 11/08/24
*or other representative documents, letters, and/or shipping memos

Number of days samples have been sitting prior to receipt at laboratory 1 days

Are the samples clearly identified? (explain "no" answer below) ☑ YES ☐ NO

Were all sample containers received intact (i.e. not broken, leaking etc.)? (explain "no" answer below) ☑ YES ☐ NO

Were appropriate sample containers used? ☑ YES ☐ NO ☐ Unknown

If custody seals are present on samples, are they intact? ☑ NA ☐ YES ☐ NO

Are samples requiring no headspace, headspace free? ☐ NA ☑ YES ☐ NO

Is the following information provided on the COC, and does it match the sample label?
(explain "no" answer below)

Sample ID's	☑ Yes ☐ No		☐ Not on COC/label
Date Sampled	☑ Yes ☐ No		☐ Not on COC/label
Time Sampled	☑ Yes ☐ No		☐ Not on COC/label
# of Containers	☐ Yes ☑ No	Added Trip blank at lab.	
Relinquished	☑ Yes ☐ No		
Requested analysis	☑ Yes ☐ On Hold		

Other comments (use a separate page if needed)

Air Samples: Were any additional canisters/tubes received? ☑ NA ☐ YES ☐ NO

Number of unused TO15 canisters _____ **Number of unused TO17 tubes** _____

3600 Fremont Ave N
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
5500 4th Ave S
Seattle, WA 98108

RE: 411122,
Work Order Number: 2411170

November 15, 2024

Attention Michael Erdahl:

Fremont Analytical, Inc, an Alliance Technical Group company, received 3 sample(s) on 11/8/2024 for the analyses presented in the following report.

Ammonia by SM 4500 NH3G
Dissolved Gases by RSK-175
Ion Chromatography by EPA 300.0
Total Alkalinity by EPA 310.2
Total Organic Carbon by SM 5310C
Total Sulfide by SM 4500-S2-D

All analyses were performed according to our accredited Quality Assurance program. Please contact the laboratory if you should have any questions about the results.

Please note, while the appearance of our logo and branding will update, our commitment to accuracy, speed, and customer service remain values celebrated and shared by Alliance Technical Group. Thank you for the opportunity to serve you.

Sincerely,

Brianna Barnes
Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.4 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Date: *11/15/2024*

CLIENT: Friedman & Bruya
Project: 411122
Work Order: 2411170

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2411170-001	MW-23D-4Q24	11/05/2024 11:05 AM	11/08/2024 2:45 PM
2411170-002	MW-9D-4Q24	11/05/2024 9:10 AM	11/08/2024 2:45 PM
2411170-003	FD-01-4Q24	11/05/2024 10:00 AM	11/08/2024 2:45 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2411170**

Date: **11/15/2024**

CLIENT: Friedman & Bruya
Project: 411122

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2411170**
Date Reported: **11/15/2024**

CLIENT: Friedman & Bruya
Project: 411122

Lab ID: 2411170-001 **Collection Date:** 11/5/2024 11:05:00 AM
Client Sample ID: **MW-23D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.139	0.00500		mg/L	1	11/12/2024 2:45:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:45:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:45:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	27.5	2.00	D	mg/L	10	11/11/2024 5:37:00 PM
Nitrite (as N)	ND	0.400	DH	mg/L	2	11/8/2024 10:20:00 PM
Nitrate (as N)	ND	0.400	DH	mg/L	2	11/8/2024 10:20:00 PM
Sulfate	ND	1.00		mg/L	1	11/11/2024 6:46:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	9.93	0.700		mg/L	1	11/11/2024 9:45:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	262	25.0	D	mg/L	10	11/11/2024 2:43:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45830		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/15/2024 11:10:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95602		Analyst: BB
Sulfide	ND	0.0500		mg/L	1	11/11/2024 8:49:51 AM

Analytical Report

Work Order: **2411170**
Date Reported: **11/15/2024**

CLIENT: Friedman & Bruya
Project: 411122

Lab ID: 2411170-002 **Collection Date:** 11/5/2024 9:10:00 AM
Client Sample ID: **MW-9D-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.0110	0.00500		mg/L	1	11/12/2024 2:47:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:47:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:47:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	27.9	2.00	D	mg/L	10	11/11/2024 6:00:00 PM
Nitrite (as N)	ND	0.400	DH	mg/L	2	11/8/2024 10:43:00 PM
Nitrate (as N)	ND	0.400	DH	mg/L	2	11/8/2024 10:43:00 PM
Sulfate	1.97	1.00		mg/L	1	11/11/2024 7:10:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	8.25	0.700		mg/L	1	11/11/2024 10:14:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	136	25.0	D	mg/L	10	11/11/2024 2:45:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45830		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/15/2024 11:15:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95602		Analyst: BB
Sulfide	0.0706	0.0500		mg/L	1	11/11/2024 8:49:51 AM

Analytical Report

Work Order: **2411170**
Date Reported: **11/15/2024**

CLIENT: Friedman & Bruya
Project: 411122

Lab ID: 2411170-003 **Collection Date:** 11/5/2024 10:00:00 AM
Client Sample ID: **FD-01-4Q24** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R95662		Analyst: CO
Methane	0.0120	0.00500		mg/L	1	11/12/2024 2:49:00 PM
Ethene	ND	0.0100		mg/L	1	11/12/2024 2:49:00 PM
Ethane	ND	0.0100		mg/L	1	11/12/2024 2:49:00 PM
Ion Chromatography by EPA 300.0				Batch ID: 45790		Analyst: OP
Chloride	27.4	2.00	D	mg/L	10	11/11/2024 6:23:00 PM
Nitrite (as N)	ND	0.400	DH	mg/L	2	11/8/2024 11:06:00 PM
Nitrate (as N)	ND	0.400	DH	mg/L	2	11/8/2024 11:06:00 PM
Sulfate	1.27	1.00		mg/L	1	11/11/2024 7:33:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R95639		Analyst: OP
Total Organic Carbon	9.25	0.700		mg/L	1	11/11/2024 10:42:00 AM
Total Alkalinity by EPA 310.2				Batch ID: R95619		Analyst: NR
Alkalinity, Total (As CaCO3)	119	25.0	D	mg/L	10	11/11/2024 2:48:00 PM
Ammonia by SM 4500 NH3G				Batch ID: 45830		Analyst: OP
Nitrogen, Ammonia	ND	0.150		mg/L	1	11/15/2024 11:20:00 AM
Total Sulfide by SM 4500-S2-D				Batch ID: R95602		Analyst: BB
Sulfide	0.0532	0.0500		mg/L	1	11/11/2024 8:49:51 AM

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Total Alkalinity by EPA 310.2

Sample ID: **MB-95619**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **MBLKW**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996046**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-95619**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **LCSW**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996047**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	26.2	2.50	25.00	0	105	83.8	121				

Sample ID: **2411094-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **BATCH**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996049**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	44.9	2.50						46.00	2.42	20	

Sample ID: **2411119-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95619**
Client ID: **BATCH**	Batch ID: **R95619**		Analysis Date: **11/11/2024**	SeqNo: **1996059**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	67.7	2.50						68.60	1.32	20	E

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Ammonia by SM 4500 NH3G

Sample ID: **MB-45830**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/12/2024**	RunNo: **95745**
Client ID: **MBLKW**	Batch ID: **45830**		Analysis Date: **11/15/2024**	SeqNo: **1997863**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150									

Sample ID: **LCS-45830**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/12/2024**	RunNo: **95745**
Client ID: **LCSW**	Batch ID: **45830**		Analysis Date: **11/15/2024**	SeqNo: **1997864**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	0.439	0.150	0.5000	0	87.8	81.7	122				

Sample ID: **2411229-003DDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/12/2024**	RunNo: **95745**
Client ID: **BATCH**	Batch ID: **45830**		Analysis Date: **11/15/2024**	SeqNo: **1997866**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150						0		30	

Sample ID: **2411229-003DMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **11/12/2024**	RunNo: **95745**
Client ID: **BATCH**	Batch ID: **45830**		Analysis Date: **11/15/2024**	SeqNo: **1997868**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138				S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2411229-003DMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **11/12/2024**	RunNo: **95745**
Client ID: **BATCH**	Batch ID: **45830**		Analysis Date: **11/15/2024**	SeqNo: **1997869**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	0.150	0.5000	0	0	15.8	138	0		30	S

NOTES:
S - Outlying spike recovery observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **MB-45790** SampType: **MBLK** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **MBLKW** Batch ID: **45790** Analysis Date: **11/7/2024** SeqNo: **1995162**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.200									
Nitrite (as N)	ND	0.200									
Nitrate (as N)	ND	0.200									
Sulfate	ND	1.00									

Sample ID: **2411102-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	7.67	0.200						7.706	0.468	20	E
Nitrite (as N)	ND	0.200						0		20	H
Nitrate (as N)	0.578	0.200						0.5830	0.861	20	H
Sulfate	7.82	1.00						7.770	0.680	20	

Sample ID: **2411102-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995170**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.31	0.200	0.7500	7.706	80.8	80	120				E
Nitrite (as N)	0.749	0.200	0.7500	0	99.9	80	120				H
Nitrate (as N)	1.38	0.200	0.7500	0.5830	106	80	120				H
Sulfate	11.5	1.00	3.750	7.770	99.4	80	120				

Sample ID: **2411102-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995171**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8.33	0.200	0.7500	7.706	83.7	80	120	8.312	0.264	20	E
Nitrite (as N)	0.753	0.200	0.7500	0	100	80	120	0.7490	0.533	20	H
Nitrate (as N)	1.39	0.200	0.7500	0.5830	107	80	120	1.377	0.796	20	H

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Ion Chromatography by EPA 300.0

Sample ID: **2411102-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995171**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	11.6	1.00	3.750	7.770	101	80	120	11.50	0.581	20	

Sample ID: **2411130-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995205**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	14.9	0.200						14.93	0.0536	20	E
Nitrite (as N)	ND	0.200						0		20	
Nitrate (as N)	3.60	0.200						3.599	0.0556	20	
Sulfate	16.3	1.00						16.31	0.245	20	

Sample ID: **2411130-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **11/7/2024** RunNo: **95604**
Client ID: **BATCH** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995206**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	15.4	0.200	0.7500	14.93	64.9	80	120				ES
Nitrite (as N)	0.757	0.200	0.7500	0	101	80	120				
Nitrate (as N)	4.35	0.200	0.7500	3.599	99.9	80	120				
Sulfate	20.1	1.00	3.750	16.31	101	80	120				

NOTES:
S - Outlying spike recoveries were associated with this sample.

Sample ID: **LCS-45790** SampType: **LCS** Units: **mg/L** Prep Date: **11/8/2024** RunNo: **95604**
Client ID: **LCSW** Batch ID: **45790** Analysis Date: **11/8/2024** SeqNo: **1995182**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.740	0.200	0.7500	0	98.7	90	110				
Nitrite (as N)	0.719	0.200	0.7500	0	95.9	90	110				
Nitrate (as N)	0.738	0.200	0.7500	0	98.4	90	110				
Sulfate	3.67	1.00	3.750	0	97.8	90	110				

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Total Sulfide by SM 4500-S2-D

Sample ID: **MB-R95602**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95602**
Client ID: **MBLKW**	Batch ID: **R95602**		Analysis Date: **11/11/2024**	SeqNo: **1995109**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.0500									

Sample ID: **LCS-R95602**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95602**
Client ID: **LCSW**	Batch ID: **R95602**		Analysis Date: **11/11/2024**	SeqNo: **1995110**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.194	0.0500	0.2000	0	96.8	80	120				

Sample ID: **2411161-001ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95602**
Client ID: **BATCH**	Batch ID: **R95602**		Analysis Date: **11/11/2024**	SeqNo: **1995112**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.0545	0.0500						0.05200	4.67	20	

Sample ID: **2411161-001AMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95602**
Client ID: **BATCH**	Batch ID: **R95602**		Analysis Date: **11/11/2024**	SeqNo: **1995113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.215	0.0500	0.2000	0.05200	81.4	80	120				

Sample ID: **2411161-001AMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95602**
Client ID: **BATCH**	Batch ID: **R95602**		Analysis Date: **11/11/2024**	SeqNo: **1995114**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.217	0.0500	0.2000	0.05200	82.6	80	120	0.2147	1.15	20	

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R95639**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95639**
Client ID: **MBLKW**	Batch ID: **R95639**		Analysis Date: **11/11/2024**	SeqNo: **1995924**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.700									

Sample ID: **LCS-R95639**	SampType: **LCS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95639**
Client ID: **LCSW**	Batch ID: **R95639**		Analysis Date: **11/11/2024**	SeqNo: **1995925**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	26.2	0.700	25.00	0	105	87.6	109				

Sample ID: **2411119-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95639**
Client ID: **BATCH**	Batch ID: **R95639**		Analysis Date: **11/11/2024**	SeqNo: **1995927**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.69	0.700						1.666	1.19	20	

Sample ID: **2411119-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95639**
Client ID: **BATCH**	Batch ID: **R95639**		Analysis Date: **11/11/2024**	SeqNo: **1995928**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.0	0.700	25.00	1.666	101	73.1	113				

Sample ID: **2411119-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **11/11/2024**	RunNo: **95639**
Client ID: **BATCH**	Batch ID: **R95639**		Analysis Date: **11/11/2024**	SeqNo: **1995929**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	27.3	0.700	25.00	1.666	102	73.1	113	26.97	1.09	30	

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2411179-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**			
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995917**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.60	0.700						4.801	4.38	20	

Sample ID: **2411179-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **11/11/2024**		RunNo: **95639**			
Client ID: **BATCH**	Batch ID: **R95639**					Analysis Date: **11/11/2024**		SeqNo: **1995918**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	29.7	0.700	25.00	4.801	99.6	73.1	113				

Work Order: 2411170
CLIENT: Friedman & Bruya
Project: 411122

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **LCS-R95662** SampType: **LCS** Units: **ppmv** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **LCSW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996436**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,080	0.00500	1,000	0	108	73.6	124				
Ethene	1,020	0.0100	1,000	0	102	76.3	122				
Ethane	1,020	0.0100	1,000	0	102	76.1	123				

Sample ID: **MB-R95662** SampType: **MBLK** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **MBLKW** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996435**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500									
Ethene	ND	0.0100									
Ethane	ND	0.0100									

Sample ID: **2411119-001DREP** SampType: **REP** Units: **mg/L** Prep Date: **11/12/2024** RunNo: **95662**
Client ID: **BATCH** Batch ID: **R95662** Analysis Date: **11/12/2024** SeqNo: **1996421**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00500						0		30	
Ethene	ND	0.0100						0		30	
Ethane	ND	0.0100						0		30	

Sample Log-In Check List

Client Name:	FB	Work Order Number:	2411170
Logged by:	Morgan Wilson	Date Received:	11/8/2024 2:45:00 AM

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Courier		

Log In

3.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
4.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
6.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
7.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8.	Are samples properly preserved?	Yes ☑	No ☐	
9.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
11.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
12.	Does paperwork match bottle labels?	Yes ☑	No ☐	
13.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14.	Is it clear what analyses were requested?	Yes ☑	No ☐	
15.	Were all hold times (except field parameters, pH e.g.) able to be met?	Yes ☐	No ☑	

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

Item Information

Item #	Temp ºC
Sample	6.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2411170

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 5500 4th Ave S
City, State, ZIP Seattle, WA 98108
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER
Alliance Technical Group

PROJECT NAME/NO.	PO #
411122	E-508

REMARKS
EIM and EQuIS

TURNAROUND TIME
☒ Standard TAT
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Anions	Ammonia	Sulfide	RSK MEE	alkalinity	TOC					Notes
MW-23D-4Q24		11/5/2024	1105	water	6	x	x	x	x	x	x					Anions=nitrate,
MW-9D-4Q24		11/5/2024	910	water	6	x	x	x	x	x	x					nitrite, sulfate,
FD-01-4Q24		11/5/2024	1000	water	6	x	x	x	x	x	x					chloride

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	11/8/24	1007
Received by:		gina gerrard	ATG	11/8/24	2:45PM
Relinquished by:					
Received by:					

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	9
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	1
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	1
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	9

Notes for Table 749-1

[a] It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

[b] **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

> **Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

[c] Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[Area Calculation Aid] [Aerial Photo with Area Designations] [TEE Table 749-1] [Index of Tables]

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

APPENDIX E
Site-Specific MTCA Method B TPH Cleanup Levels

A2.2 Worksheet for Calculating Soil Cleanup Level for the Protection of Groundwater Quality: Leaching Pathway
WAC 173-340-740 and 747

Date: 01/26/24
Site Name: Whidbey Island
Sample Name: HA-1-S6

Chemical of Concern or EC Group	Measured Soil Conc @dry basis	Soil Leaching Pathway Results	
		Soil Conc being tested (1)	Predicted Conc @Well
	mg/kg	mg/kg	µg/L
Petroleum EC Fraction			
AL_EC >5-6	8.5	4.70E-02	1.19E+01
AL_EC >6-8	20	1.11E-01	1.23E+01
AL_EC >8-10	8.5	4.70E-02	9.72E-01
AL_EC >10-12	43.8	2.42E-01	5.82E-01
AL_EC >12-16	5.6	3.10E-02	2.06E-03
AL_EC >16-21	5.6	3.10E-02	1.81E-06
AL_EC >21-34	5.6	3.10E-02	3.18E-11
AR_EC >8-10	98.82	5.46E-01	2.89E+02
AR_EC >10-12	57.61	3.18E-01	1.09E+02
AR_EC >12-16	32.1	1.77E-01	2.88E+01
AR_EC >16-21	5.6	3.10E-02	1.05E+00
AR_EC >21-34	5.6	3.10E-02	2.13E-02
Benzene	0.015	8.29E-05	3.01E-01
Toluene	0.98	5.42E-03	1.51E+01
Ethylbenzene	0.32	1.77E-03	4.01E+00
Total Xylenes	1.86	1.03E-02	2.20E+01
Naphthalene	0.29	1.60E-03	1.04E+00
1-Methyl Naphthalene	0.6	3.32E-03	1.13E+00
2-Methyl Naphthalene	1.2	6.63E-03	2.30E+00
n-Hexane	0	0.00E+00	0.00E+00
MTBE	0	0.00E+00	0.00E+00
Ethylene Dibromide (EDB)	0	0.00E+00	0.00E+00
1,2 Dichloroethane (EDC)	0	0.00E+00	0.00E+00
Benzo(a)anthracene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene		*see Note (2)*	
Chrysene			
Dibenz(a,h)anthracene			
Indeno(1,2,3-cd)pyrene			
Sum	302.595	1.67E+00	5.00E+02

Site-Specific Hydrogeological Properties previously entered:

Item	Symbol	Value	Units
Total soil porosity:	*n*	0.43	unitless
Volumetric water content:	*Qw*	0.3	unitless
Volumetric air content:	*Qa*	0.13	unitless
Soil bulk density measured:	ρ_b	1.5	kg/L
Fraction Organic Carbon:	*foc*	0.001	unitless
Dilution Factor:	*DF*	1	unitless

Target TPH Groundwater Concentration

Target Groundwater TPH Conc, µg/L: 500

Calculate Soil Leaching Protective Condition for the Measured Sample Concentration

Calculate a Soil Concentration that is Protective of the Target TPH Groundwater Concentration

Click the button below to run Soil Leaching calculations.
Note: *a target TPH Groundwater Conc must be entered in Worksheet A1_Soil Data Entry to run the soil leaching calculation.*

Calculate Soil Leaching Cleanup Level

Model Results

Soil Leaching Criterion: Protection of Target TPH Groundwater Concentration

Protective TPH Soil Concentration, mg/kg = 1.67 *@ 2 sig figures* **1.7**

TPH GW Concentration, ug/L = 5.00E+02 *@ 2 sig figures* **500**

Soil Leaching Pass or Fail? **Fail**

Additional Model Details

Type of model used for computation: 3-Phase Model
Computation completed? Yes!

100% NAPL, mg/kg 73386.8

Mass Distribution Pattern @ 4-phase in soil pore system:

Total Mass distributed in Water Phase: 5.98% in Solid: 69.52%
Total Mass distributed in Air Phase: 6.83% in NAPL: 17.67%

Notes:

(1) These are the soil leaching concentrations calculated by the 3- or 4-phase equilibrium partitioning models. These modelled concentrations are predicted to be protective of the target TPH groundwater concentration.

(2) Individual cPAHs are not included in the soil leaching calculations to predict a total TPH concentration protective of potable groundwater. Compliance with cPAHs in soil for the protection of groundwater is determined separately using the 3-phase partitioning model - *see* Ecology Implementation Memo No. 10 - Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs) (April 20, 2015). *See* weblink below.

Link to Ecology Implementation Memo 10

A2.2 Worksheet for Calculating Soil Cleanup Level for the Protection of Groundwater Quality: Leaching Pathway
WAC 173-340-740 and 747

Date: 01/25/24
Site Name: Whidbey Island
Sample Name: HA-2-S7

Chemical of Concern or EC Group	Measured Soil Conc @dry basis	Soil Leaching Pathway Results	
		Soil Conc being tested (1)	Predicted Conc @Well
	mg/kg	mg/kg	µg/L
Petroleum EC Fraction			
AL_EC >5-6	114	4.26E+00	7.56E+02
AL_EC >6-8	498	1.86E+01	8.10E+02
AL_EC >8-10	304	1.13E+01	4.11E+01
AL_EC >10-12	456	1.70E+01	4.29E+00
AL_EC >12-16	53.6	2.00E+00	9.38E-03
AL_EC >16-21	5.6	2.09E-01	1.20E-06
AL_EC >21-34	5.6	2.09E-01	9.92E-12
AR_EC >8-10	450	1.68E+01	5.12E+03
AR_EC >10-12	652	2.43E+01	3.56E+03
AR_EC >12-16	192	7.17E+00	2.79E+02
AR_EC >16-21	46.9	1.75E+00	5.64E+00
AR_EC >21-34	5.6	2.09E-01	7.24E-03
Benzene	1.5	5.60E-02	1.81E+02
Toluene	430	1.61E+01	3.27E+04
Ethylbenzene	180	6.72E+00	7.35E+03
Total Xylenes	1130	4.22E+01	4.51E+04
Naphthalene	43	1.61E+00	3.45E+02
1-Methyl Naphthalene	18	6.72E-01	9.49E+01
2-Methyl Naphthalene	42	1.57E+00	2.16E+02
n-Hexane	0	0.00E+00	0.00E+00
MTBE	0	0.00E+00	0.00E+00
Ethylene Dibromide (EDB)	0	0.00E+00	0.00E+00
1,2 Dichloroethane (EDC)	0	0.00E+00	0.00E+00
Benzo(a)anthracene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene		*see Note (2)*	
Chrysene			
Dibenz(a,h)anthracene			
Indeno(1,2,3-cd)pyrene			
Sum	4627.8	1.73E+02	9.66E+04

Site-Specific Hydrogeological Properties previously entered:

Item	Symbol	Value	Units
Total soil porosity:	*n*	0.43	unitless
Volumetric water content:	*Qw*	0.3	unitless
Volumetric air content:	*Qa*	0.13	unitless
Soil bulk density measured:	ρ_b	1.5	kg/L
Fraction Organic Carbon:	*foc*	0.001	unitless
Dilution Factor:	*DF*	1	unitless

Target TPH Groundwater Concentration

Target Groundwater TPH Conc, µg/L: 500

Calculate Soil Leaching Protective Condition for the Measured Sample Concentration

Calculate a Soil Concentration that is Protective of the Target TPH Groundwater Concentration

Click the button below to run Soil Leaching calculations.
Note: *a target TPH Groundwater Conc must be entered in Worksheet A1_Soil Data Entry to run the soil leaching calculation.*

Calculate Soil Leaching Cleanup Level

Model Results

Soil Leaching Criterion: Protection of Target TPH Groundwater Concentration

Protective TPH Soil Concentration, mg/kg = 172.77 *@ 2 sig figures* **170**

TPH GW Concentration, ug/L = 5.00E+02 *@ 2 sig figures* **500**

Soil Leaching Pass or Fail? **Fail**

Additional Model Details

Type of model used for computation: 4-Phase Model
Computation completed? Yes!

100% NAPL, mg/kg 72382.1

Mass Distribution Pattern @ 4-phase in soil pore system:

Total Mass distributed in Water Phase: 1.16% in Solid: 8.69%
Total Mass distributed in Air Phase: 2.75% in NAPL: 87.40%

Check Soil Residual Saturation TPH Levels: Refer to Table 747-5

Notes:

(1) These are the soil leaching concentrations calculated by the 3- or 4-phase equilibrium partitioning models. These modelled concentrations are predicted to be protective of the target TPH groundwater concentration.

(2) Individual cPAHs are not included in the soil leaching calculations to predict a total TPH concentration protective of potable groundwater. Compliance with cPAHs in soil for the protection of groundwater is determined separately using the 3-phase partitioning model - *see* Ecology Implementation Memo No. 10 - Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs) (April 20, 2015). *See* weblink below.

Link to Ecology Implementation Memo 10

A2.2 Worksheet for Calculating Soil Cleanup Level for the Protection of Groundwater Quality: Leaching Pathway
WAC 173-340-740 and 747

Date: 01/16/24
Site Name: Whidbey Island
Sample Name: MW-21D-S7

Chemical of Concern or EC Group	Measured Soil Conc @dry basis	Soil Leaching Pathway Results	
		Soil Conc being tested (1)	Predicted Conc @Well
	mg/kg	mg/kg	µg/L
Petroleum EC Fraction			
AL_EC >5-6	0.7	2.99E-03	7.74E-01
AL_EC >6-8	22.7	9.69E-02	1.16E+01
AL_EC >8-10	33.6	1.43E-01	3.84E+00
AL_EC >10-12	80.4	3.43E-01	1.40E+00
AL_EC >12-16	54.8	2.34E-01	4.30E-02
AL_EC >16-21	5.75	2.45E-02	2.57E-06
AL_EC >21-34	5.75	2.45E-02	1.24E-08
AR_EC >8-10	44.9	1.92E-01	1.05E+02
AR_EC >10-12	91.8	3.92E-01	1.44E+02
AR_EC >12-16	102	4.35E-01	8.35E+01
AR_EC >16-21	20.8	8.88E-02	5.54E+00
AR_EC >21-34	5.75	2.45E-02	1.90E-01
Benzene	0.0005	2.13E-06	7.80E-03
Toluene	0.0015	6.40E-06	1.81E-02
Ethylbenzene	1.3	5.55E-03	1.33E+01
Total Xylenes	7.6	3.24E-02	7.28E+01
Naphthalene	7.6	3.24E-02	2.33E+01
1-Methyl Naphthalene	5.8	2.48E-02	9.07E+00
2-Methyl Naphthalene	16	6.83E-02	2.55E+01
n-Hexane	0	0.00E+00	0.00E+00
MTBE	0	0.00E+00	0.00E+00
Ethylene Dibromide (EDB)	0	0.00E+00	0.00E+00
1,2 Dichloroethane (EDC)	0	0.00E+00	0.00E+00
Benzo(a)anthracene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Benzo(a)pyrene		*see Note (2)*	
Chrysene			
Dibenz(a,h)anthracene			
Indeno(1,2,3-cd)pyrene			
Sum	507.252	2.17E+00	5.00E+02

Site-Specific Hydrogeological Properties previously entered:

Item	Symbol	Value	Units
Total soil porosity:	*n*	0.43	unitless
Volumetric water content:	*Qw*	0.3	unitless
Volumetric air content:	*Qa*	0.13	unitless
Soil bulk density measured:	ρ_b	1.5	kg/L
Fraction Organic Carbon:	*foc*	0.001	unitless
Dilution Factor:	*DF*	1	unitless

Target TPH Groundwater Concentration

Target Groundwater TPH Conc, µg/L: 500

Calculate Soil Leaching Protective Condition for the Measured Sample Concentration

Calculate a Soil Concentration that is Protective of the Target TPH Groundwater Concentration

Click the button below to run Soil Leaching calculations.
Note: *a target TPH Groundwater Conc must be entered in Worksheet A1_Soil Data Entry to run the soil leaching calculation.*

Calculate Soil Leaching Cleanup Level

Model Results

Soil Leaching Criterion: Protection of Target TPH Groundwater Concentration

Protective TPH Soil Concentration, mg/kg = 2.17 *@ 2 sig figures* **2.2**

TPH GW Concentration, ug/L = 5.00E+02 *@ 2 sig figures* **500**

Soil Leaching Pass or Fail? **Fail**

Additional Model Details

Type of model used for computation: 4-Phase Model
Computation completed? Yes!

100% NAPL, mg/kg 74650.9

Mass Distribution Pattern @ 4-phase in soil pore system:

Total Mass distributed in Water Phase: 4.62% in Solid: 89.37%
Total Mass distributed in Air Phase: 4.77% in NAPL: 1.24%

Notes:

(1) These are the soil leaching concentrations calculated by the 3- or 4-phase equilibrium partitioning models. These modelled concentrations are predicted to be protective of the target TPH groundwater concentration.

(2) Individual cPAHs are not included in the soil leaching calculations to predict a total TPH concentration protective of potable groundwater. Compliance with cPAHs in soil for the protection of groundwater is determined separately using the 3-phase partitioning model - *see* Ecology Implementation Memo No. 10 - Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs) (April 20, 2015). *See* weblink below.

Link to Ecology Implementation Memo 10

APPENDIX F
Potential Data Gaps Investigation

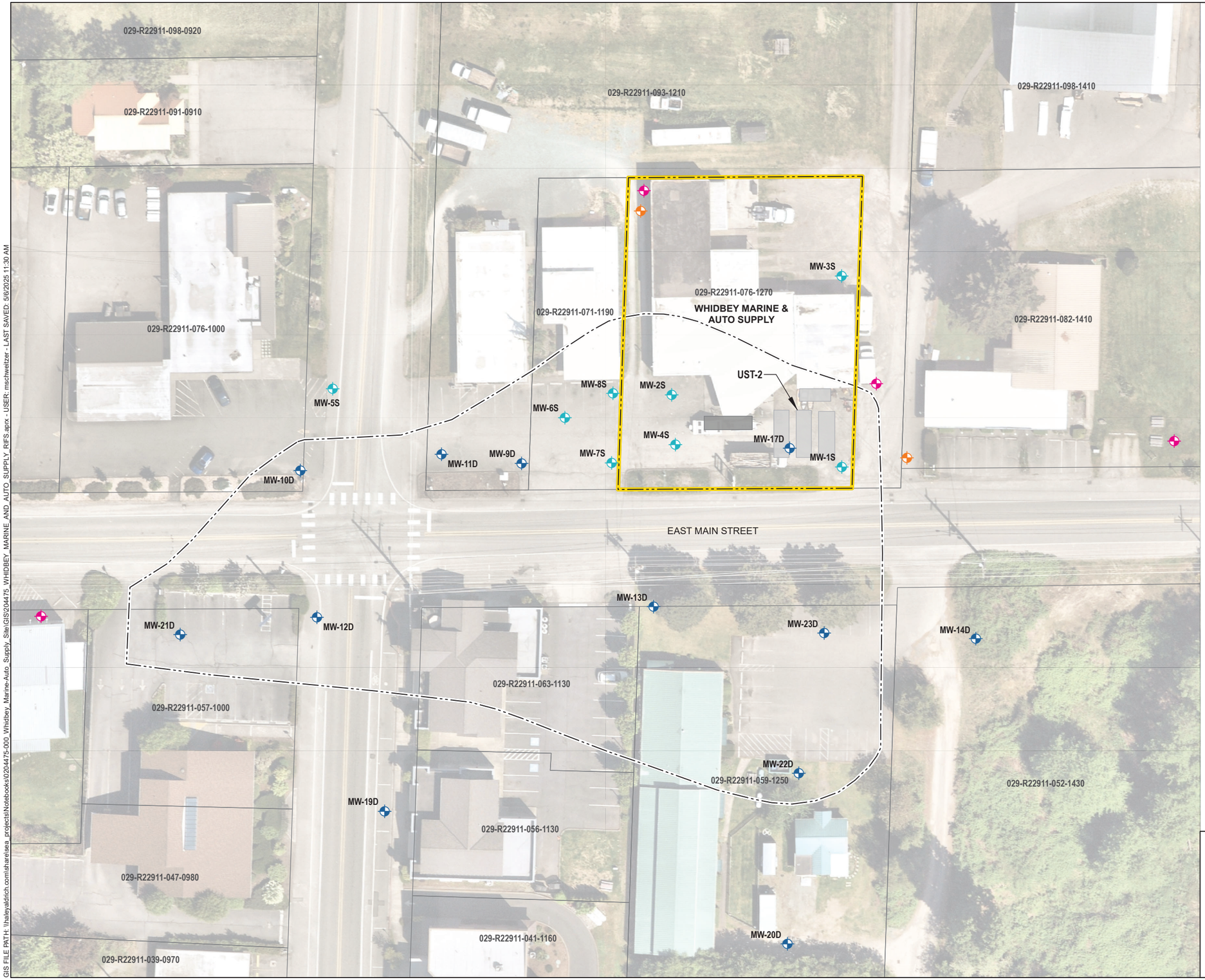
APPENDIX F

Potential Data Gaps Investigation

A conceptual data gaps investigation scope of work and cost estimate was prepared as part of this remedial investigation and feasibility study to address the data gaps identified in the previous section in advance of cleanup implementation. The analyses, number of borings and wells, and sample counts listed are assumed to effectively close the data gaps identified and are used for cost estimating purposes. The full scope of work will be finalized in a data gaps investigation work plan—the conceptual cost estimates are included here for reference only. The data gaps investigation scope of work includes the following.

- Prepare a work plan presenting the location and depths of proposed sub-slab samples, soil borings, and monitoring wells; detail the multi-media sampling methods to be used; and describe the number and location of samples to be collected and detail the analyses and analytical test methods. The estimated cost of completing this task is approximately $20,000 to $30,000.
- Install sub-slab temporary vapor pins within the building foundation and collect sub-slab samples for analysis of volatile organic carbons (VOCs) and air phase hydrocarbons to evaluate potential vapor intrusion. For cost estimating purposes, four vapor pins are assumed to be installed and one round of samples will be collected. The estimated cost of completing this task is approximately $16,000 to $23,000.
  - If analytical results indicate that there is a vapor intrusion risk, additional sub-slab samples should be collected at properties to the west (parcels 029-R22911-071-1190 and 029-R22911-057-1000). These additional samples would be collected in a separate phase and costs are excluded from this cost estimate.
- Advance soil borings below the footprint of the building on the former Whidbey Marine & Auto Supply property (Property) to identify if contamination is remaining within the upper 15 feet. For cost estimating purposes, ten borings are assumed to be advanced up to 15 feet bgs using a direct push drill rig. The estimated cost of completing this task, including analysis of soil samples for the Whidbey Marine & Auto Supply site (Site) chemicals of concern (COCs), is approximately $39,000 to $58,000.
- Install monitoring wells within the SeaLevel Aquifer and the perched groundwater zone to delineate the extent of petroleum impacts within the Sea-Level Aquifer and the on-Property source and extent of chlorinated volatile organic compounds in soil and groundwater. For cost estimating purposes, six borings advanced to a maximum of 120 feet bgs, installation of six new monitoring wells (four within the Sea-Level Aquifer and two within the perched groundwater zone [Figure F-1]), collection and analysis of soil samples from borings, and collection and analysis of groundwater samples from monitoring wells are assumed. Analysis of up to 55 soil samples (including duplicates) and up to 22 groundwater samples (including duplicates) for Site COCs over two sampling events is assumed. The estimated cost of completing this task is approximately $180,000 to $269,000.
- Prepare a report summarizing the data gap investigation key findings, and assessing whether additional data gaps are required to be addressed prior to cleanup. The estimated cost of completing this task could range between approximately $44,000 to $66,000.

The estimated cost to complete the data gaps investigation scope of work listed above could range between approximately $320,000 and $478,000.



GIS FILE PATH: \\haleyaldrich.com\share\sea_projects\Notebooks\0204475-000_Whidbey_Marine-Auto_Supply_Site\GIS\0204475_WHIDBEY_MARINE_AND_AUTO_SUPPLY_RIFS.aprx - USER: mschweitzer - LAST SAVED: 5/6/2025 11:30 AM

LEGEND

PROPOSED MONITORING WELLS

- PERCHED ZONE MONITORING WELL
- SEA LEVEL AQUIFER MONITORING WELL

EXISTING MONITORING WELLS

- PERCHED ZONE MONITORING WELL
- SEA LEVEL AQUIFER MONITORING WELL
- FORMER PUMP ISLAND
- FORMER UNDERGROUND STORAGE TANK (UST)
- CURRENTLY KNOWN SITE BOUNDARY
- PROPERTY BOUNDARY
- PARCEL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. MONITORING WELLS WERE SURVEYED BY APEX ENGINEERING ON 30 JANUARY 2024, WITH THE EXCEPTION OF MW-18 WHICH WAS INACCESSIBLE
3. CURRENTLY KNOWN SITE BOUNDARY REPRESENTS THE APPROXIMATE EXTENT OF KNOWN CHEMICAL CONCENTRATIONS DETECTED ABOVE APPLICABLE SCREENING LEVELS. THE SOURCE OF SOME CHEMICAL EXCEEDANCES IS CURRENTLY UNKNOWN AND MAY NOT BE ASSOCIATED WITH A RELEASE FROM THE WHIDBEY MARINE & AUTO SUPPLY PROPERTY
4. SITE FEATURES DATE SOURCE: DIGITIZED FROM "FIGURE 3", PRELIMINARY PLANNING ASSESSMENT, SES, 2017
5. ASSESSOR PARCEL DATA SOURCE: ISLAND COUNTY
6. AERIAL IMAGERY SOURCE: NEARMAP, 14 MAY 2023

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0 50 100

SCALE IN FEET

HALEY ALDRICH

WHIDBEY MARINE & AUTO SUPPLY
1695 EAST MAIN STREET
FREELAND, WASHINGTON

POTENTIAL DATA GAPS INVESTIGATION SITE PLAN

MAY 2025

FIGURE F-1