

**APPENDIX A1**  
**Boring Logs and Well Installation Diagrams**  
**(2019-2020 Investigation)**

KEY TO EXP LOGS (SOIL ONLY) - I:\P-DC\HALEYALDRICH\COM\SHARE\SEA\_DATA\GINT\INT\ALL\MEGABLOCK\LOGS.GPJ - mscsweltzer

### 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

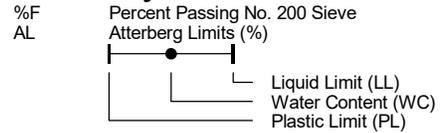
### USCS Soil Classification Chart (ASTM D 2487)

Major Divisions		Symbols		Typical Descriptions
		Graph	USCS	
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		GW	Well-Graded Gravel; Well-Graded Gravel with Sand
			GP	Poorly Graded Gravel; Poorly Graded Gravel with Sand
			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
	Sand and Sandy Soils More than 50% of Coarse Fraction Passing No. 4 Sieve		GM	Silty Gravel; Silty Gravel with Sand
			GC	Clayey Gravel; Clayey Gravel with Sand
			SW	Well-Graded Sand; Well-Graded Sand with Gravel
			SP	Poorly Graded Sand; Poorly Graded Sand with Gravel
Fine Grained Soils More than 50% of Material Passing No. 200 Sieve		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	
Clays		SM	Silty Sand; Silty Sand with Gravel	
		SC	Clayey Sand; Clayey Sand with Gravel	
		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	
		CL	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay	
Organics		CH	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay	
		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

Minor Constituents	Estimated Percentage
<b>Sand, Gravel</b>	
Trace	<5
Few	5 - 15
<b>Cobbles, Boulders</b>	
Trace	<5
Few	5 - 10
Little	15 - 25
Some	30 - 45

### Soil Test Symbols



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 (%)

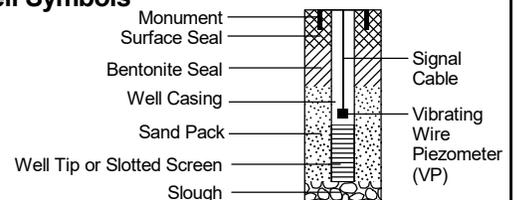
### Groundwater Indicators

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

### Sample Symbols

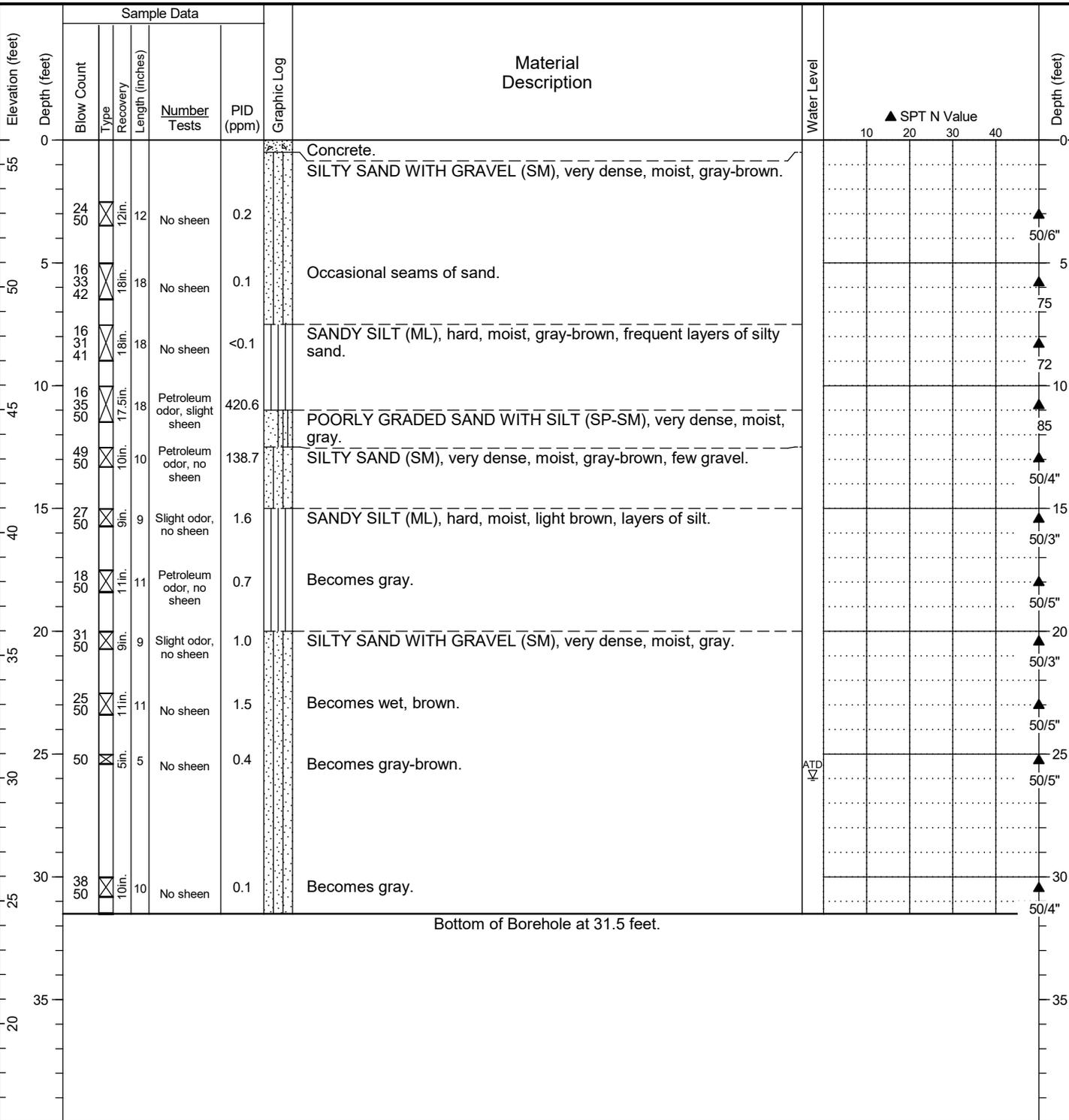
	Rock Core Run	
	Sonic Core	
	Thin-walled Sampler	

### Well Symbols



Date Started: 6/3/19 Date Completed: 6/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. Kroskie Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625079 Long: -122.342671 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 55.98 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: NA  
 Total Depth: 31.5 feet Depth to Groundwater: 26 feet

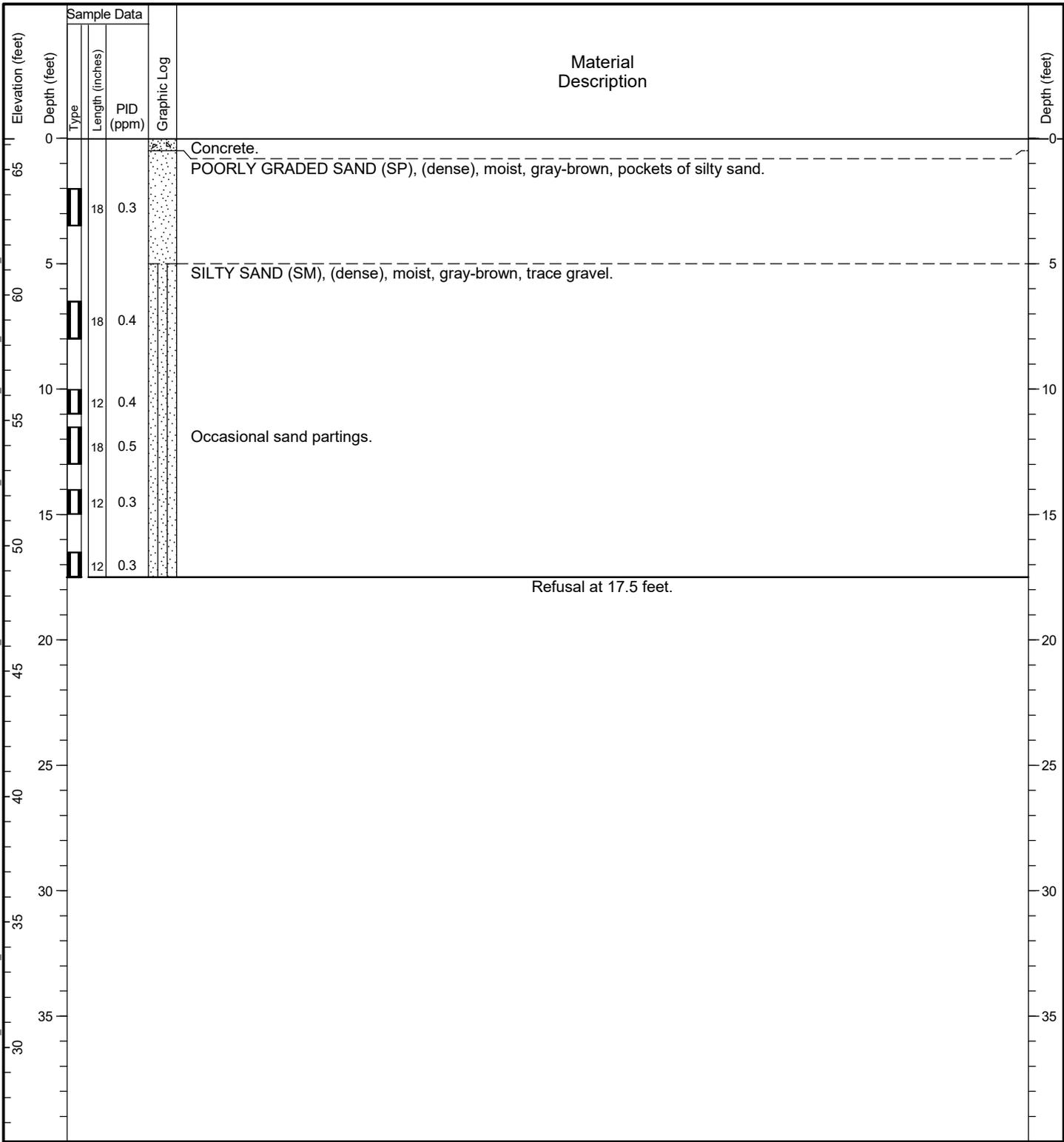
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.

Date Started: 4/3/19 Date Completed: 4/3/19 Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Location: Lat: 47.625168 Long: -122.342919 (WGS 84) Hole Diameter: 2 inches Casing Diameter: NA  
 Ground Surface Elevation: 66.25 feet (NAVD 88) Total Depth: 17.5 feet Depth to Groundwater: Not Identified  
 Comments:

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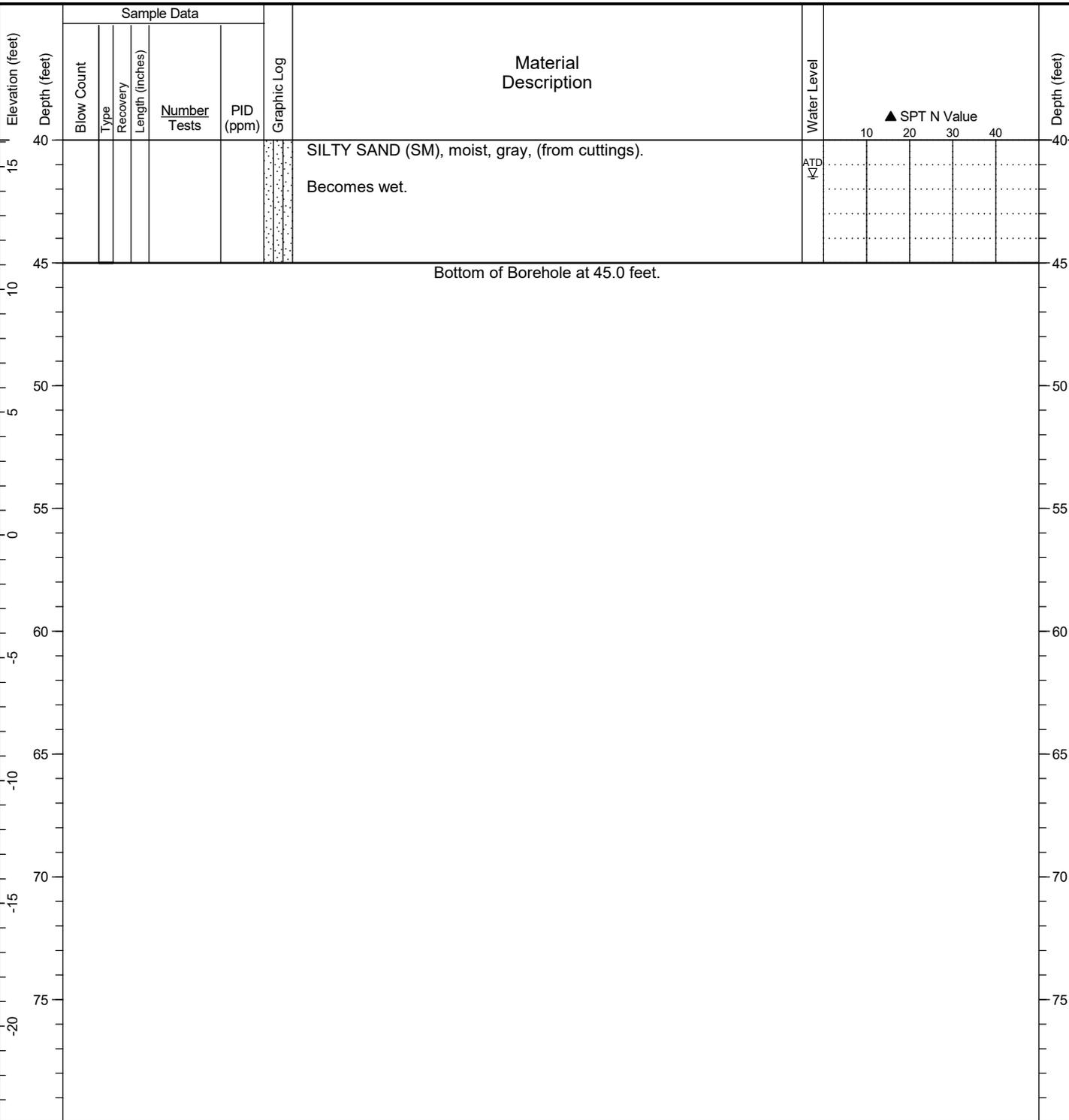
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Date Started: 6/3/19 Date Completed: 6/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. Kroskie Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625030 Long: -122.342780 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 56.08 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: \_\_\_\_\_ Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 \_\_\_\_\_ Measured Hammer Efficiency (%): Not Available  
 \_\_\_\_\_ Hole Diameter: 2 inches Casing Diameter: NA  
 \_\_\_\_\_ Total Depth: 45 feet Depth to Groundwater: 41.5 feet

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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 approximate.

Date Started: 4/3/19 Date Completed: 4/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. Kroskie Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624997 Long: -122.343344 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 69.87 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: NA  
 Total Depth: 51.5 feet Depth to Groundwater: 39 feet

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Elevation (feet)	Depth (feet)	Sample Data					Graphic Log	Material Description	Water Level	SPT N Value	Depth (feet)
		Blow Count	Type	Recovery Length (inches)	Number Tests	PID (ppm)					
0	0						Asphalt.				0
65	5	12 27 40	18in.	18	No odor, no sheen	<0.1	Becomes very dense.				5
							SILT (ML), hard, moist, brown.				67
		44 50	6in.	10	No odor, no sheen	<0.1	SILTY SAND WITH GRAVEL (SM), very dense, moist, gray-brown, scattered organics in top 2 inches.				50/4"
60	10	29 50	12in.	12	No odor, no sheen	<0.1	SILTY SAND (SM), very dense, moist, gray-brown.				50/6"
							Trace gravel, occasional layer of poorly graded sand.				50/5"
		32 50	11in.	11	No odor, no sheen	<0.1					50/5"
55	15	22 50	11in.	11	No odor, no sheen	<0.1	SILT (ML), hard, moist, gray-brown.				15
							POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), very dense, moist, light brown.				50/5"
		50	5in.	5	No odor, no sheen	<0.1	SILTY SAND WITH GRAVEL (SM), very dense, moist, gray-brown.				50/5"
50	20	35 50	11in.	11	No odor, no sheen	<0.1					20
											50/5"
		40 50	10in.	10	No odor, no sheen	<0.1					50/4"
45	25	46 50	9in.	9	No odor, no sheen	<0.1	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), very dense, moist, gray-brown.				25
											50/3"
		37 50	11in.	11	No odor, no sheen	<0.1	SILTY SAND (SM), very dense, moist, gray-brown, occasional iron oxide staining, occasional layer of silt.				50/5"
40	30	40 50	9in.	9	No odor, no sheen	<0.1	SILTY SAND WITH GRAVEL (SM), very dense, moist, gray-brown.				30
							Gravelly drilling.				50/3"
35	35	15 28 50	17in.	17	No odor, no sheen	<0.1	SILT WITH SAND (ML), hard, moist, gray-brown, frequent seams of fine to medium sand.				35
							Becomes wet.				79/11"

General Notes:

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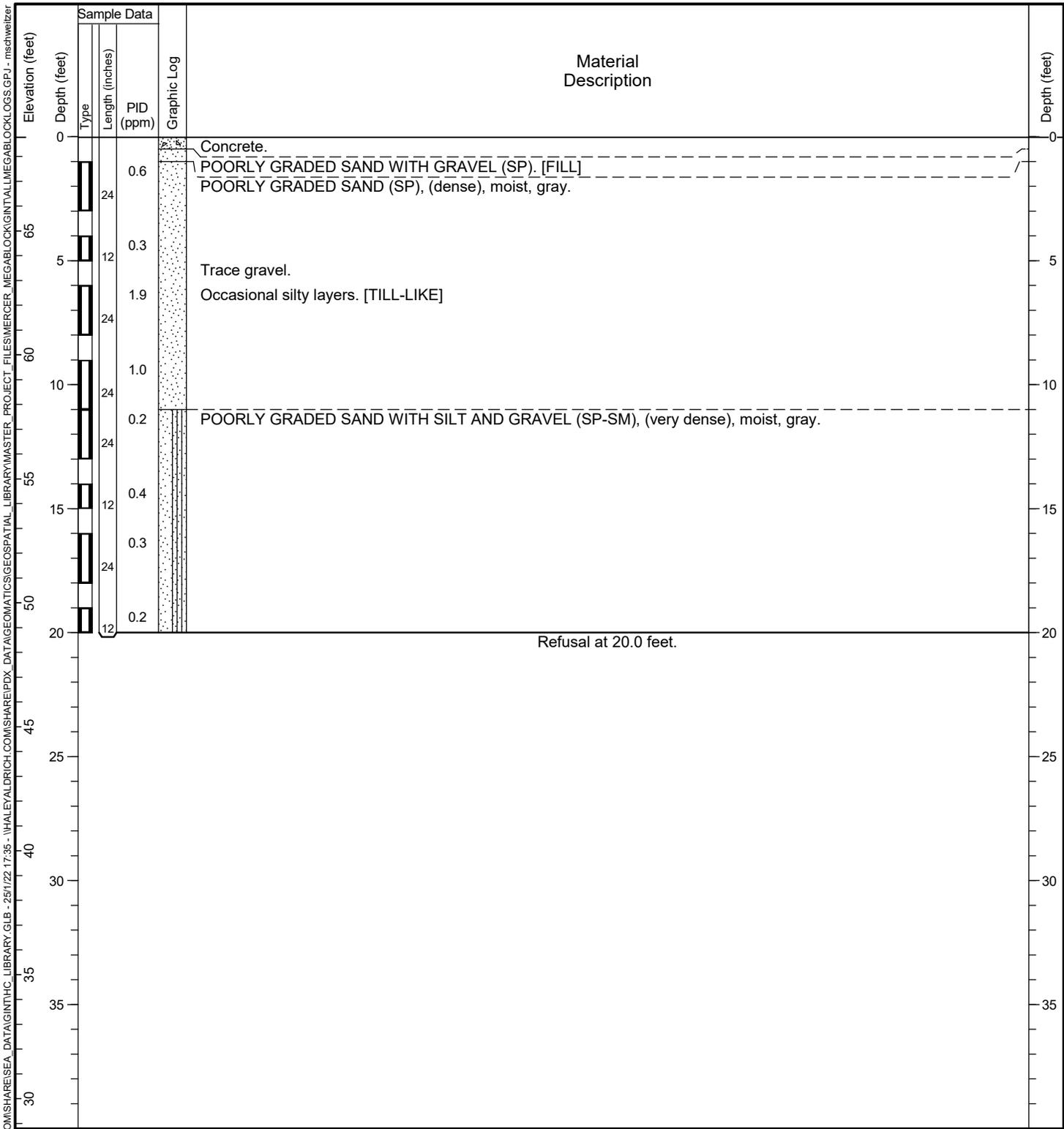
Project: Seattle DOT Dexter Parcel Site  
 Location: Seattle, Washington  
 Project No.: 19409-04

Boring Log  
 DGW-4

Figure A1-6  
 Sheet 1 of 2

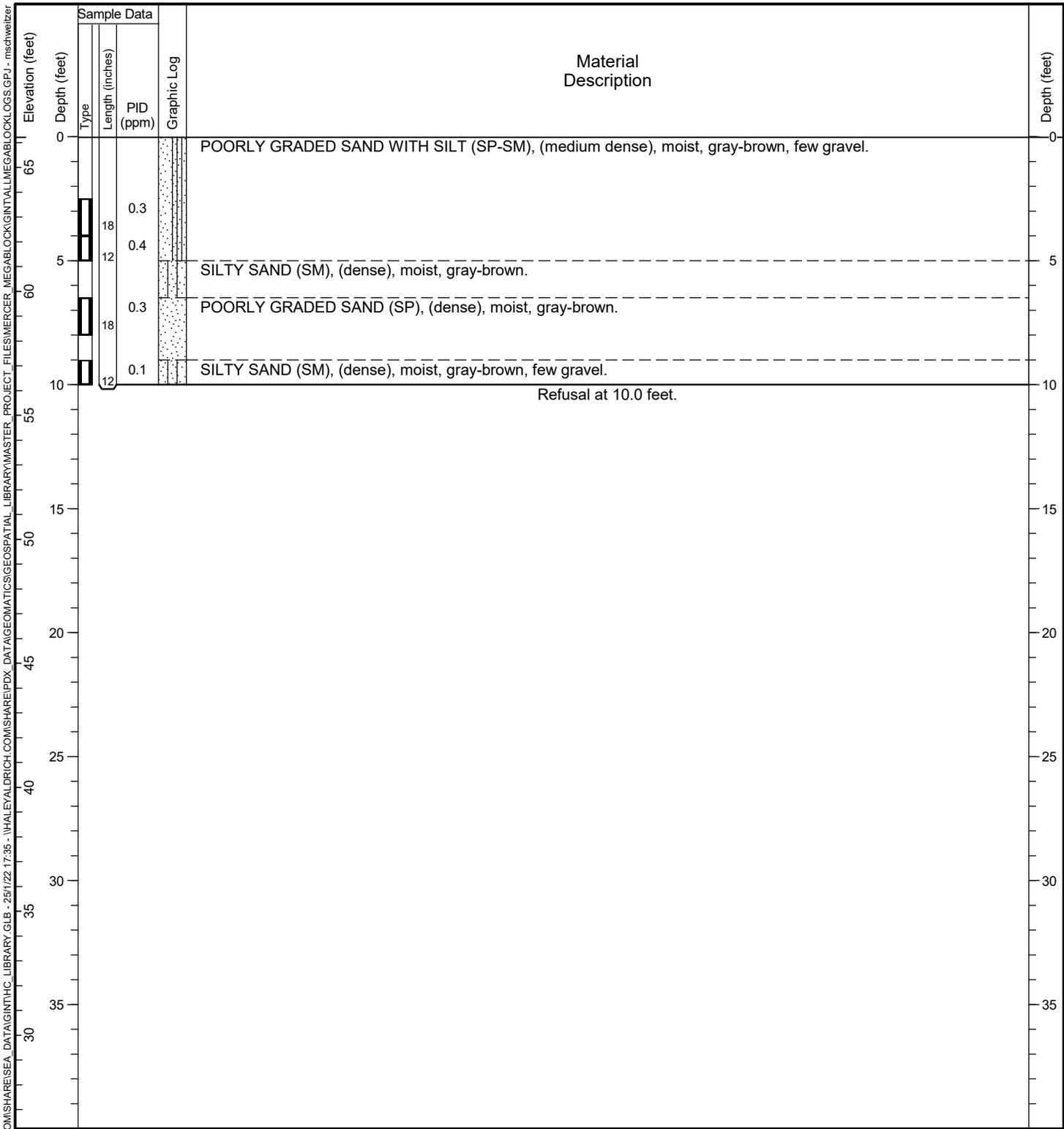


Date Started: 03/04/2019 Date Completed: 03/04/2019 Contractor/Crew: Holt Services, Inc.  
 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: GeoProbe® 7822DT / Track-mounted push-probe rig  
 Location: Lat: 47.625303 Long: -122.343141 (WGS 84) Hole Diameter: 1.75 inches Well Casing Diameter: NA  
 Ground Surface Elevation: 68.80 feet (NAVD 88) Total Depth: 20 feet Depth to Groundwater: Not Identified  
 Comments:



General Notes:  
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Date Started: 03/04/2019 Date Completed: 03/04/2019 Contractor/Crew: Holt Services, Inc.  
 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: GeoProbe® 7822DT / Track-mounted push-probe rig  
 Location: Lat: 47.625044 Long: -122.342884 (WGS 84) Hole Diameter: 1.75 inches Well Casing Diameter: NA  
 Ground Surface Elevation: 66.24 feet (NAVD 88) Total Depth: 10 feet Depth to Groundwater: Not Identified  
 Comments: \_\_\_\_\_

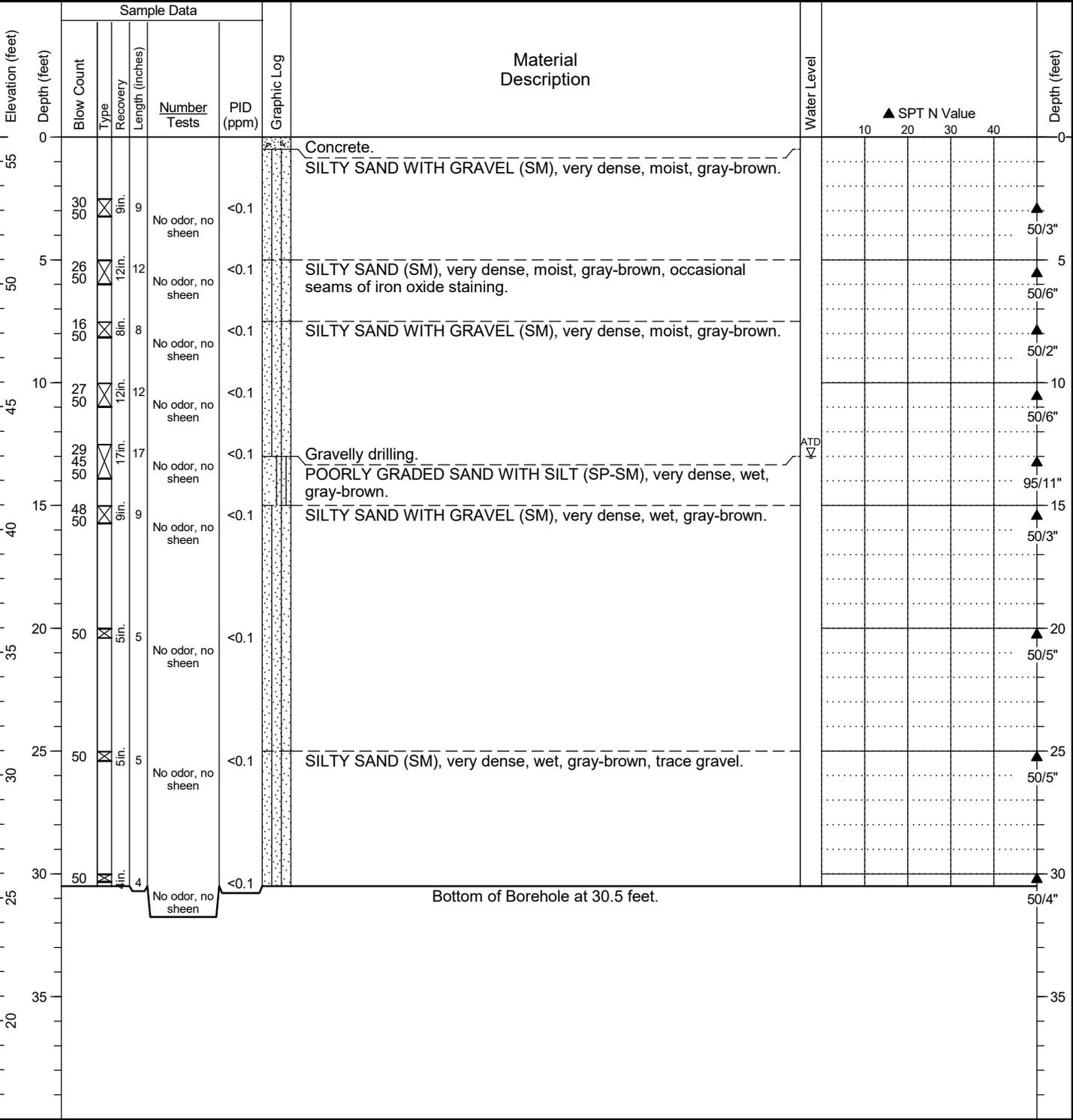


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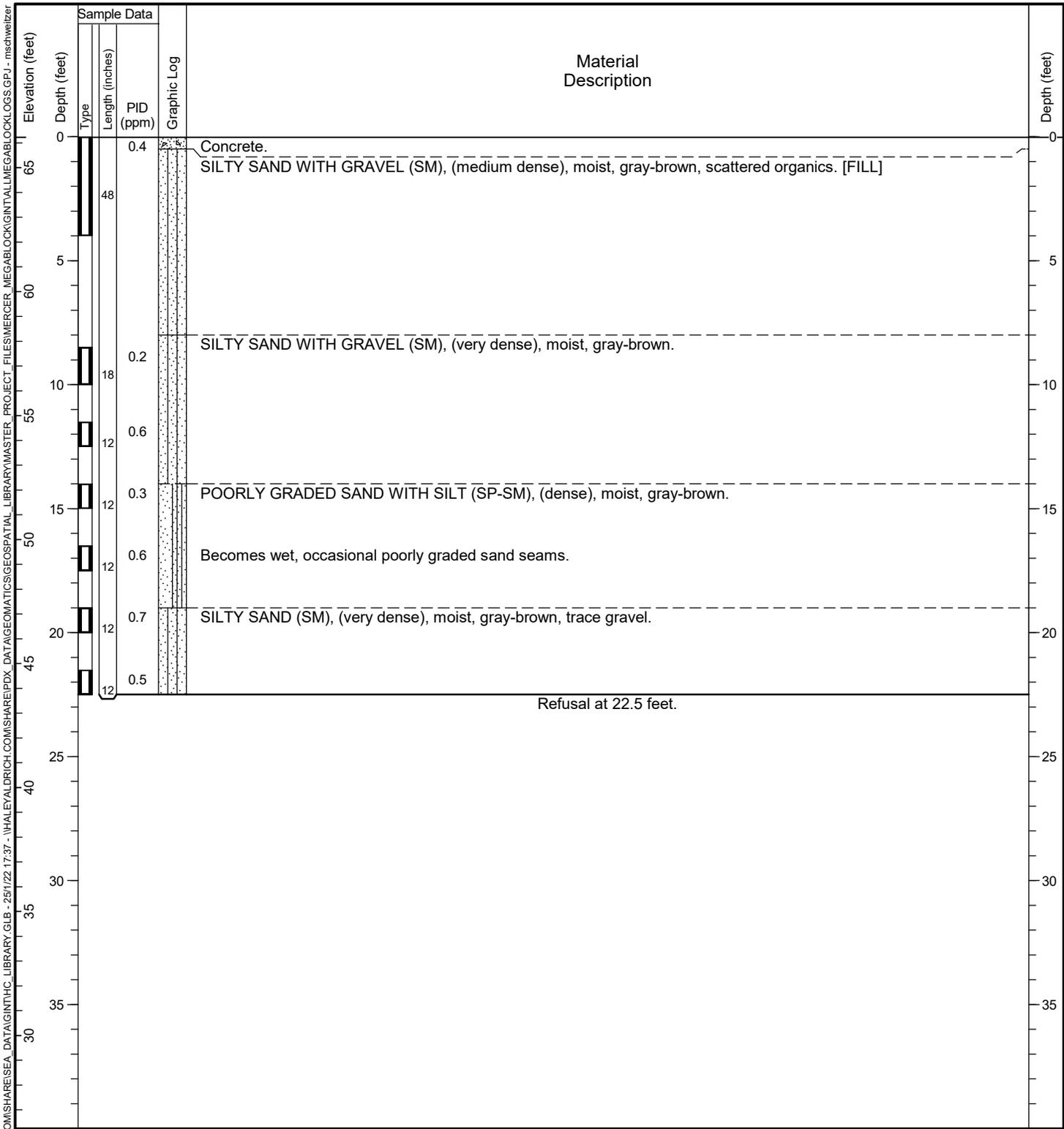
Date Started: 03/05/2019 Date Completed: 03/05/2019 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. Kroskie Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625293 Long: -122.342633 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 55.98 feet (NAVD 88) Hammer Type: Auto-hammer  
 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Comments: Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Well Casing Diameter: NA  
 Total Depth: 30.5 feet Depth to Groundwater: 13 feet

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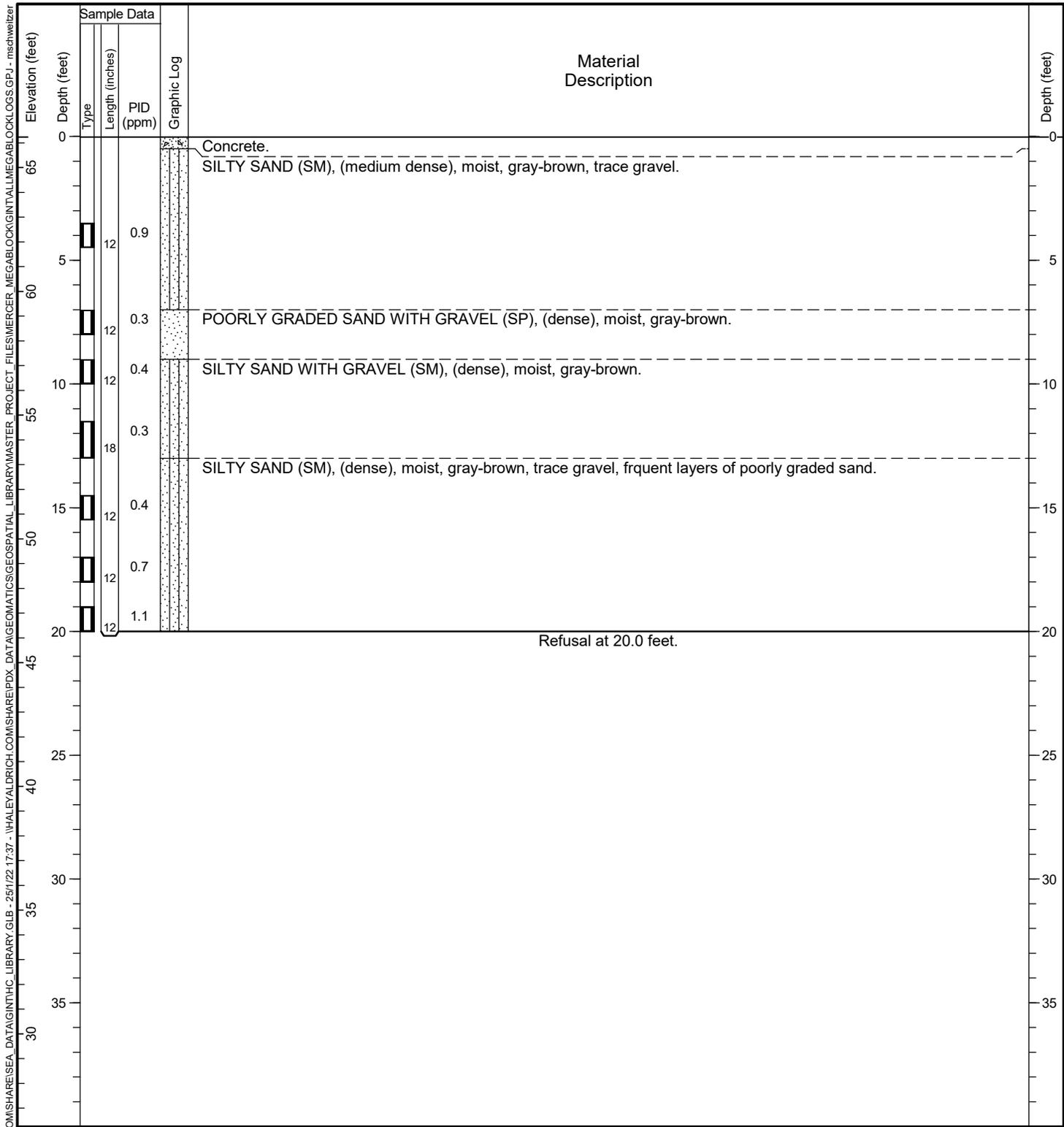
Date Started: 03/04/2019 Date Completed: 03/04/2019 Contractor/Crew: Holt Services, Inc.  
 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: GeoProbe® 7822DT / Track-mounted push-probe rig  
 Location: Lat: 47.625036 Long: -122.342973 (WGS 84) Hole Diameter: 1.75 inches Well Casing Diameter: NA  
 Ground Surface Elevation: 66.25 feet (NAVD 88) Total Depth: 22.5 feet Depth to Groundwater: Not Identified  
 Comments:



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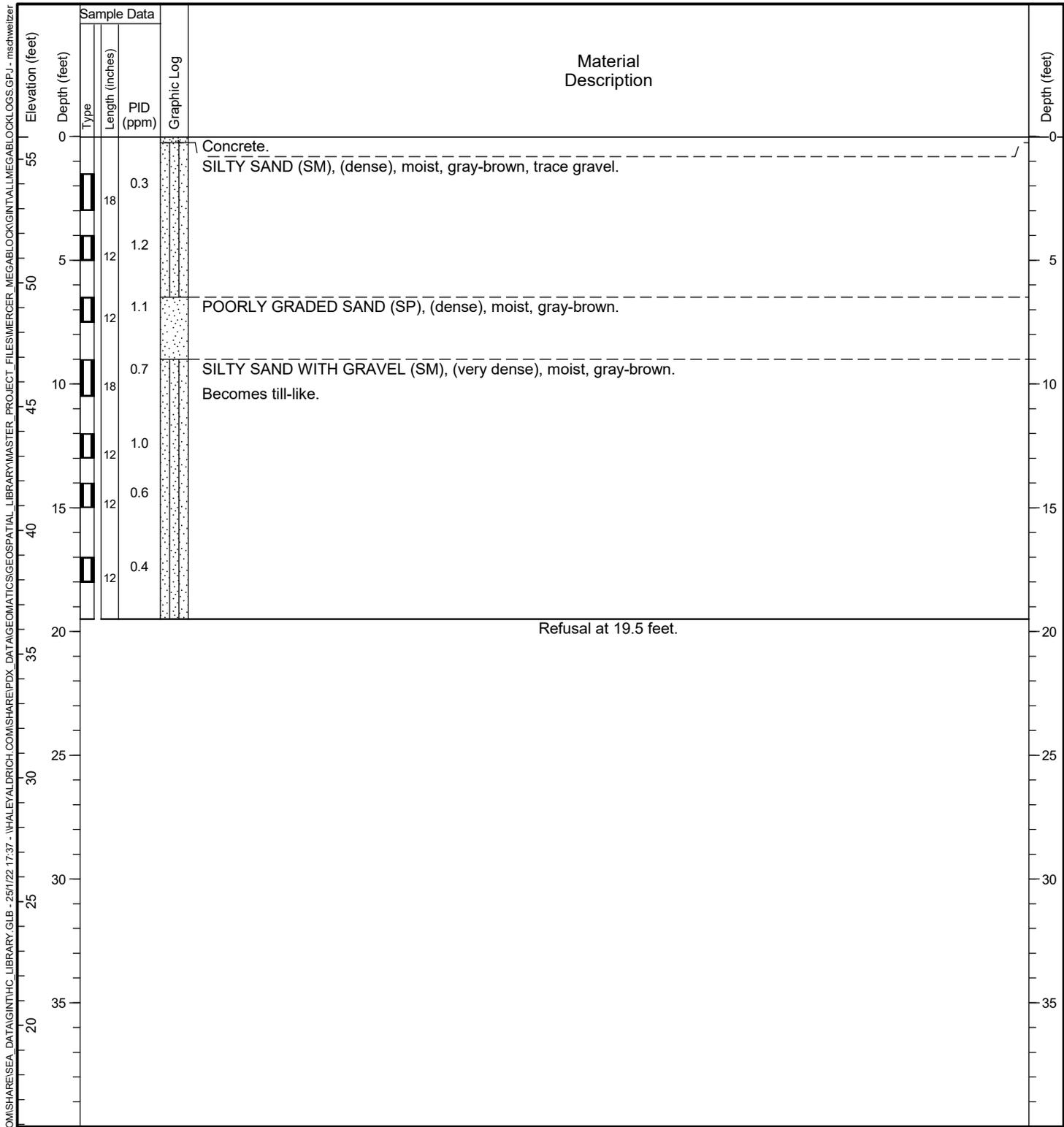
Date Started: 03/04/2019 Date Completed: 03/04/2019 Contractor/Crew: Holt Services, Inc.  
 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: GeoProbe® 7822DT / Track-mounted push-probe rig  
 Location: Lat: 47.625287 Long: -122.342933 (WGS 84) Hole Diameter: 1.75 inches Well Casing Diameter: NA  
 Ground Surface Elevation: 66.26 feet (NAVD 88) Total Depth: 20 feet Depth to Groundwater: Not Identified  
 Comments: \_\_\_\_\_



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 Logged by: B. McDonald Checked by: C. Kroskie Rig Model/Type: GeoProbe® 7822DT / Track-mounted push-probe rig  
 Location: Lat: 47.625183 Long: -122.342703 (WGS 84) Hole Diameter: 1.75 inches Well Casing Diameter: NA  
 Ground Surface Elevation: 55.92 feet (NAVD 88) Total Depth: 19.5 feet Depth to Groundwater: Not Identified  
 Comments: \_\_\_\_\_



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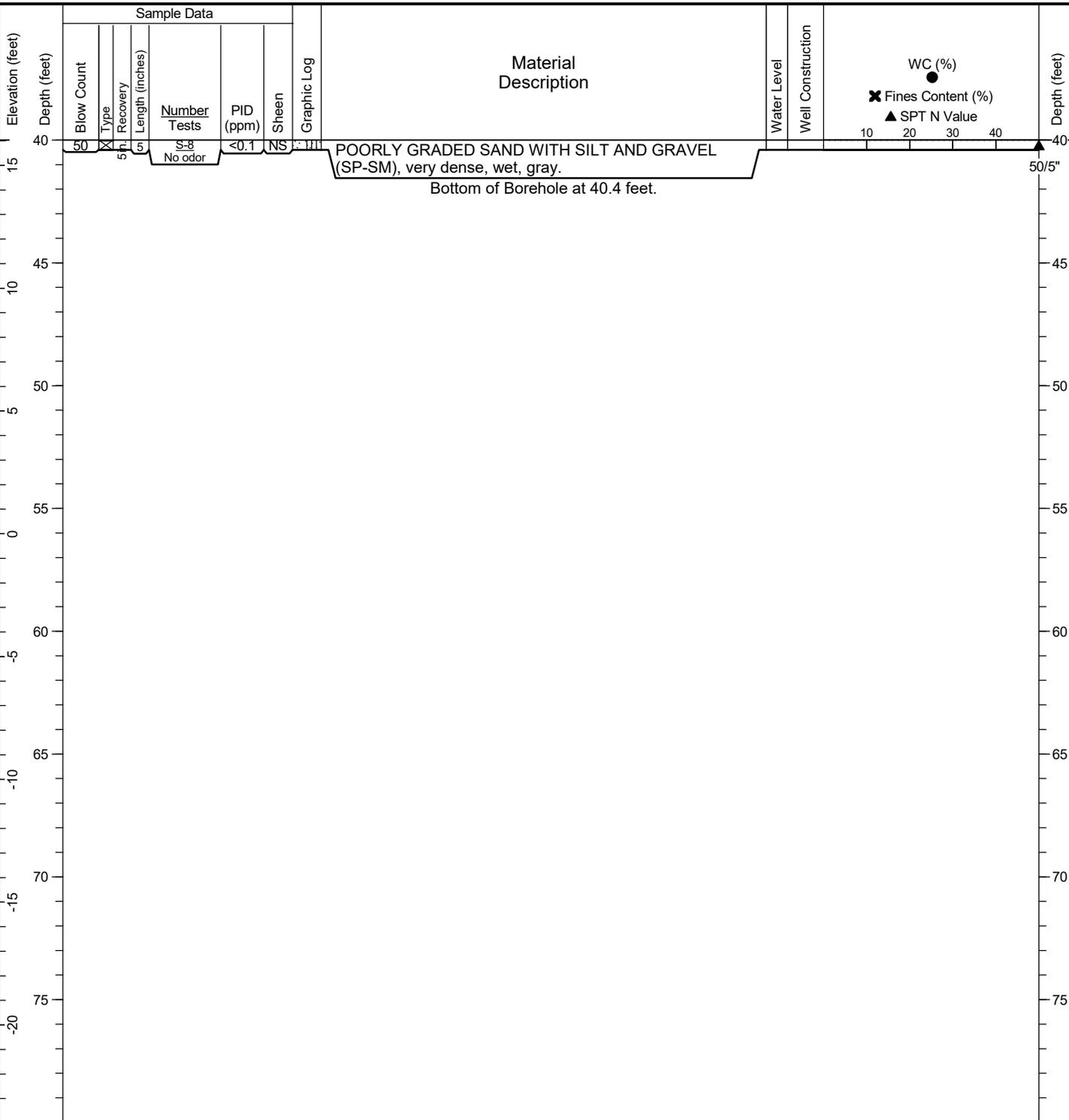
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Date Started: 2/3/20 Date Completed: 2/3/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: J. Blanchette Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625084 Long: -122.342594 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 56.03 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME933 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 40.4 feet Depth to Groundwater: 30 feet

HC BORING LOG - I:\TP-DC\HALEYALDRICH\DATA\GINT\HC\_LIBRARY\GLB - 10/9/21 15:30 - I:\HALEYALDRICH\COM\SHARE\IPDX\_DATA\GEO\GINT\GEO\SPATIAL\_LIBRARY\MASTER\_PROJECT\_FILES\MERCER\_MEGABLOCK\GINT\ALLMEGABLOCKS.GPJ - mschwitzer

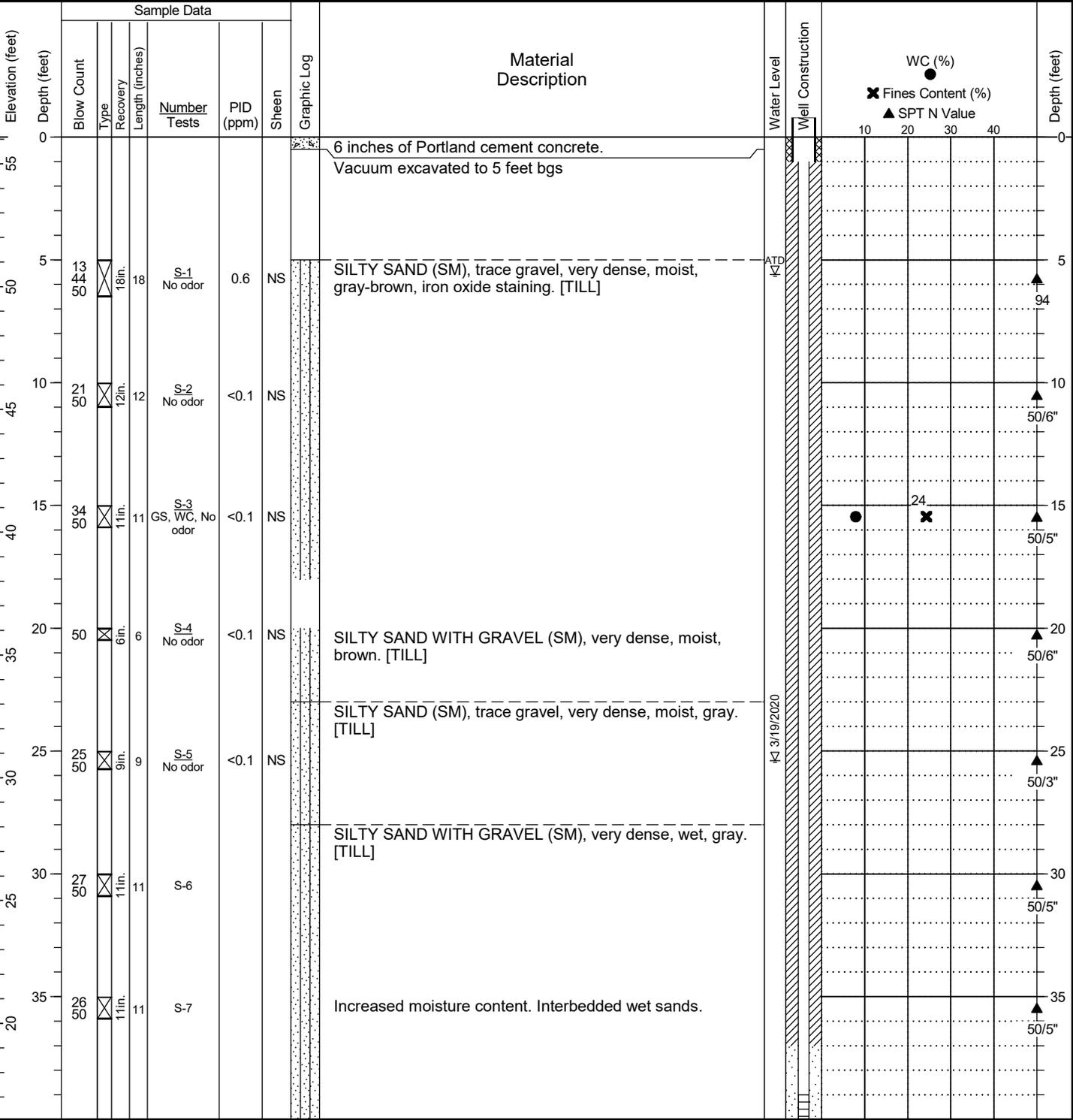


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4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

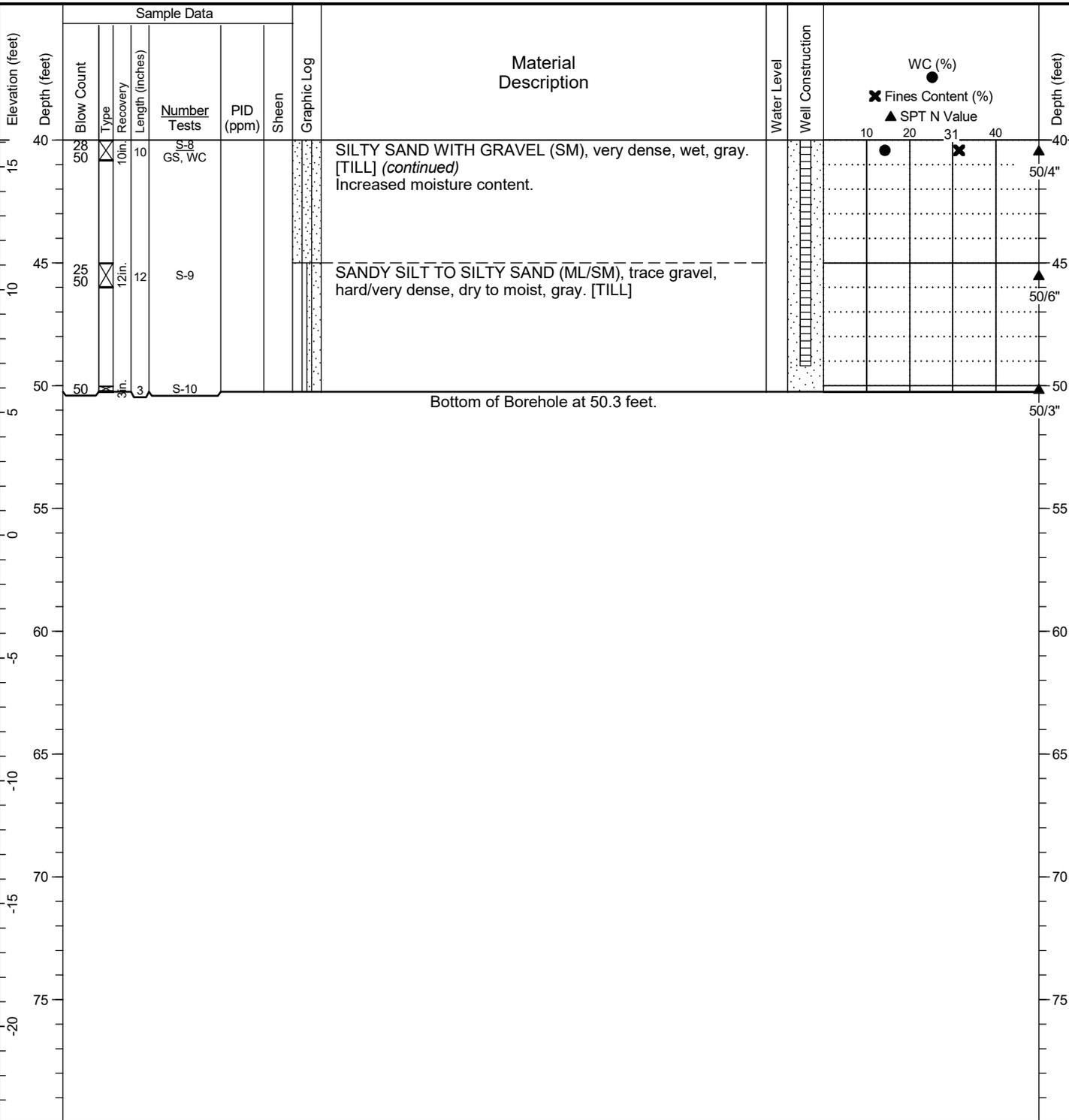
Date Started: 27/2/20 Date Completed: 27/2/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. McCabe Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625186 Long: -122.342587 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 56.09 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME932 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 50.25 feet Depth to Groundwater: 5.6 feet

HC BORING LOG - I:\TP-DC\HALEYALDRICH\DATA\GINT\ALLMEGABLOCKS.GPJ - mschwitzer



General Notes:  
 1. Refer to Figure A1-1 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 approximate.

Date Started: 27/2/20 Date Completed: 27/2/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. McCabe Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625186 Long: -122.342587 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 56.09 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME932 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 50.25 feet Depth to Groundwater: 5.6 feet



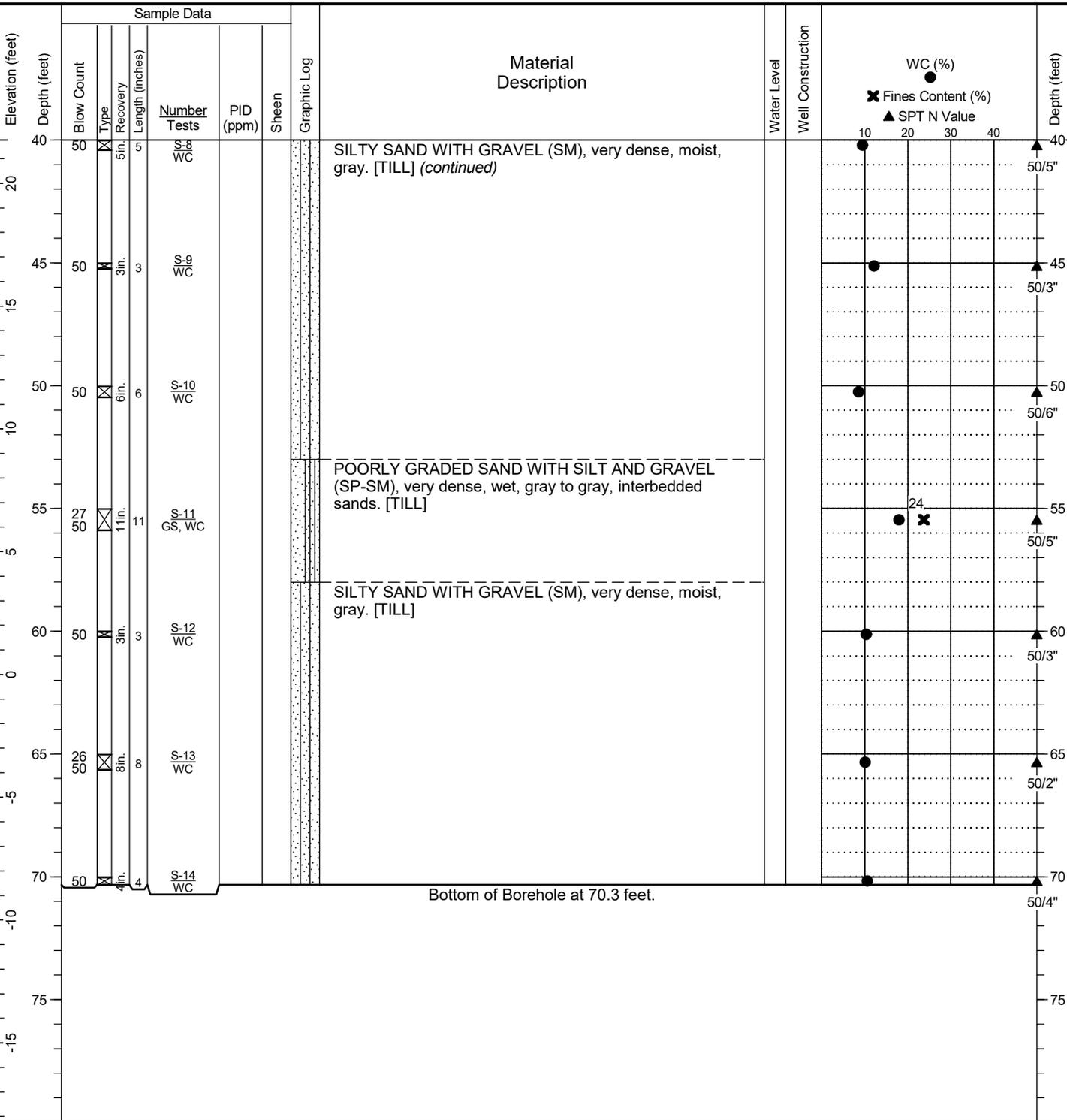
General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.  
 3. USCS designations are based on 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 approximate.

HC BORING LOG - I:\TP-DC\HALEYALDRICH\DATA\GINT\HC\_LIBRARY\GLB - 10/9/21 15:30 - I:\HALEYALDRICH\COM\SHARE\IPDX\_DATA\GEO\GINT\GEO\SPATIAL\_LIBRARY\MASTER\_PROJECT\_FILES\MERCER\_MEGABLOCK\GINT\ALLMEGABLOCK\LOGS\GPI - mschwitzer



Date Started: 26/2/20 Date Completed: 26/2/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. McCabe Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624983 Long: -122.342623 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 61.76 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME929 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 70.33 feet Depth to Groundwater: 27.2 feet

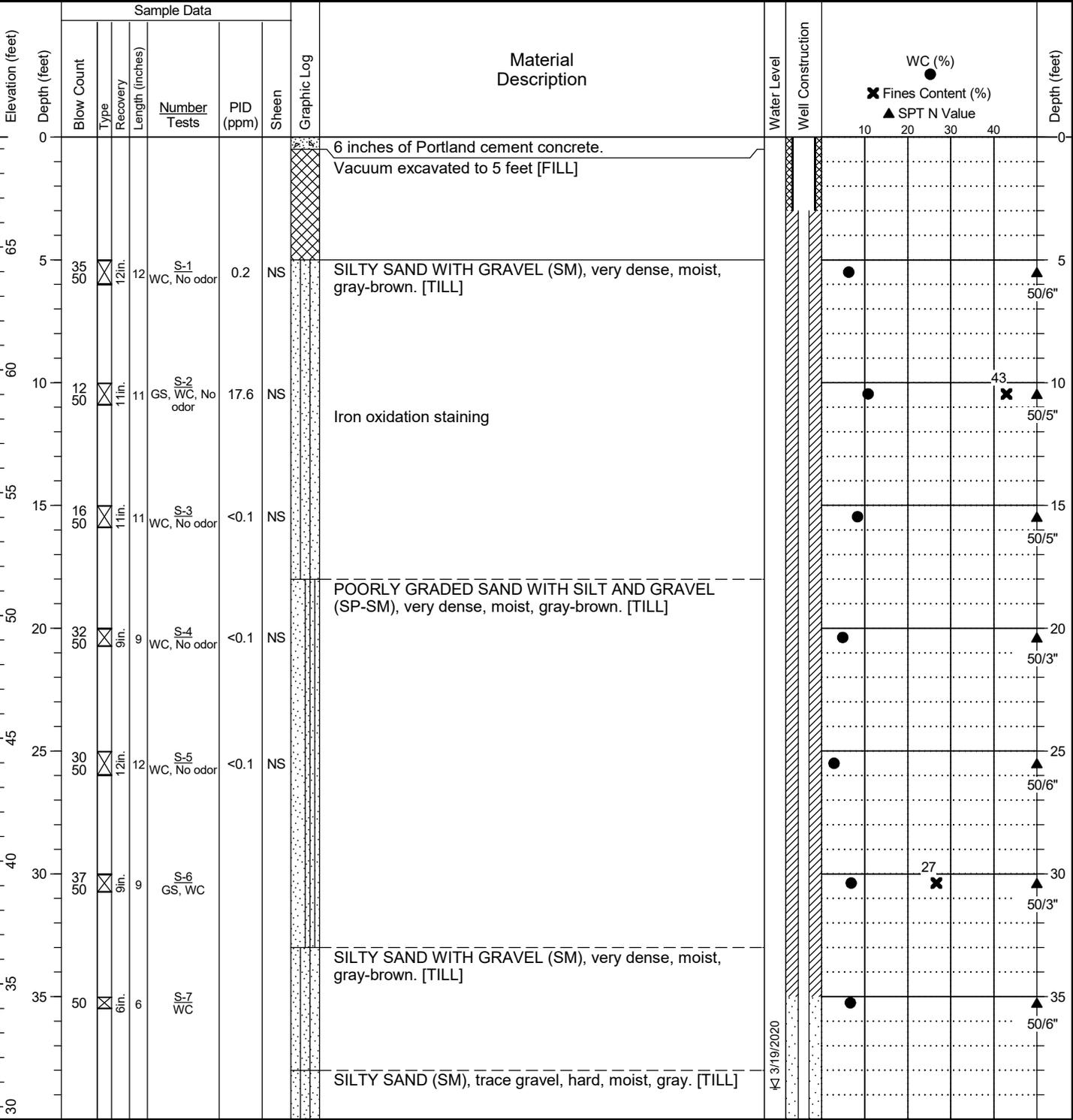
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.

Date Started: 28/2/20 Date Completed: 28/2/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. McCabe Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624983 Long: -122.343330 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 69.48 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME930 Boring was redrilled and monitoring well constructed on 03/03/2020 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 70.33 feet Depth to Groundwater: 38.71 feet

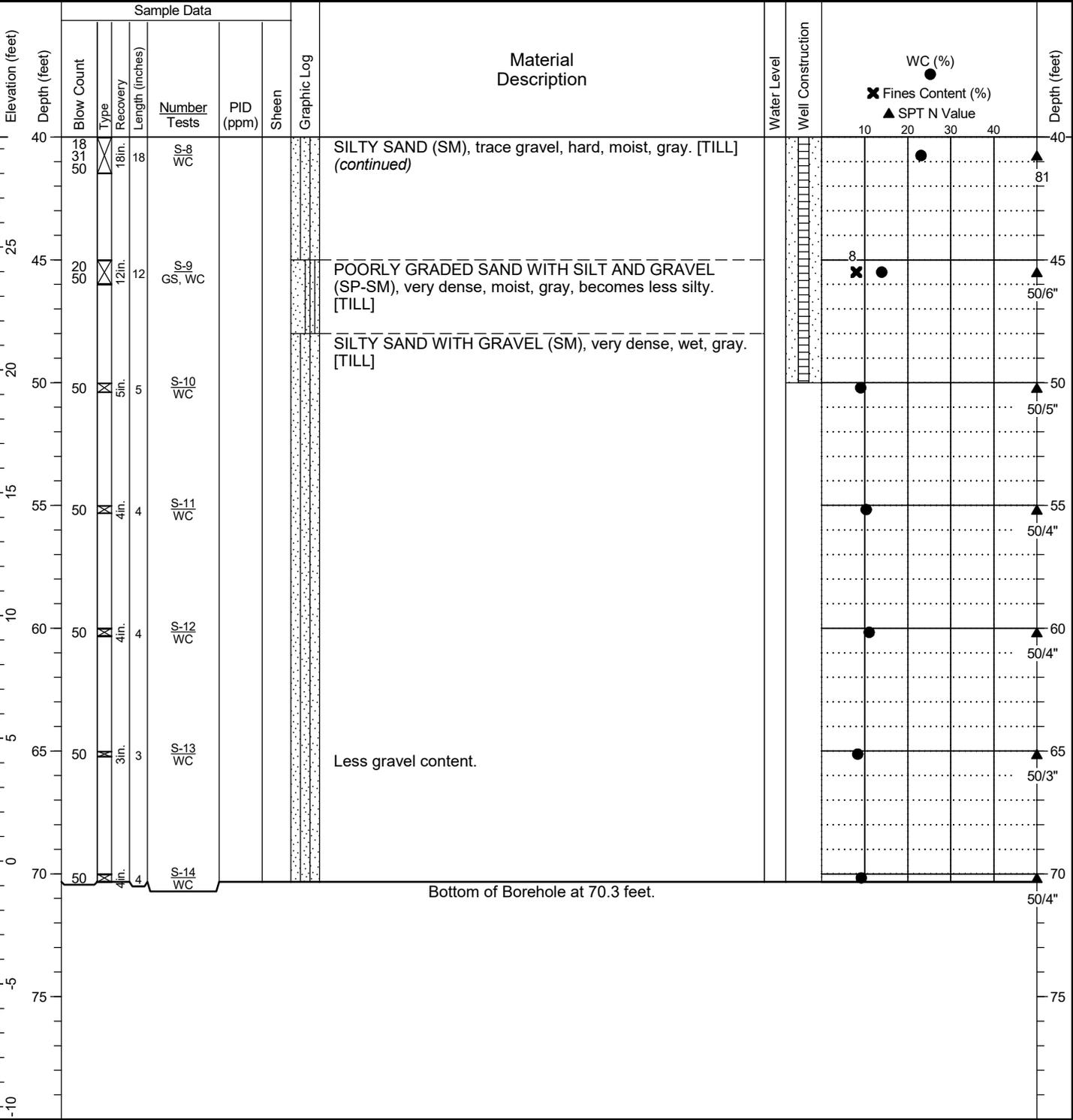
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.

Date Started: 28/2/20 Date Completed: 28/2/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. McCabe Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624983 Long: -122.343330 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 69.48 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME930 Boring was redrilled and monitoring well constructed on 03/03/2020 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 70.33 feet Depth to Groundwater: 38.71 feet

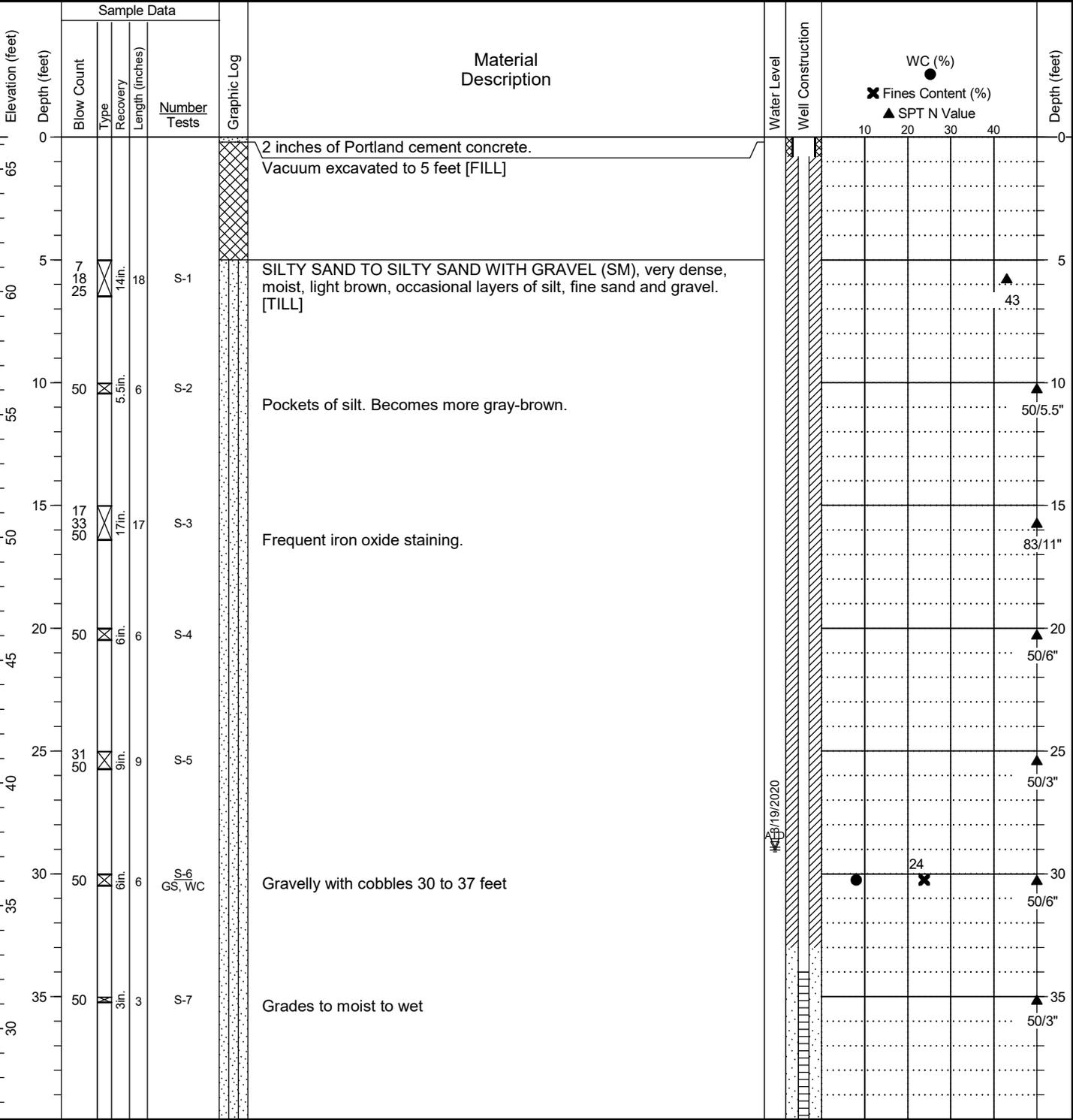
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.

Date Started: 4/3/20 Date Completed: 4/3/20 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: C. Kroskie Checked by: N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625273 Long: -122.342907 (WGS 84) Rig Model/Type: Mobile B-58 / Truck-mounted drill rig  
 Ground Surface Elevation: 66.30 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BME934 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 2 inches Casing Diameter: OD: 2 inches  
 Total Depth: 50.3 feet Depth to Groundwater: 29.03 feet

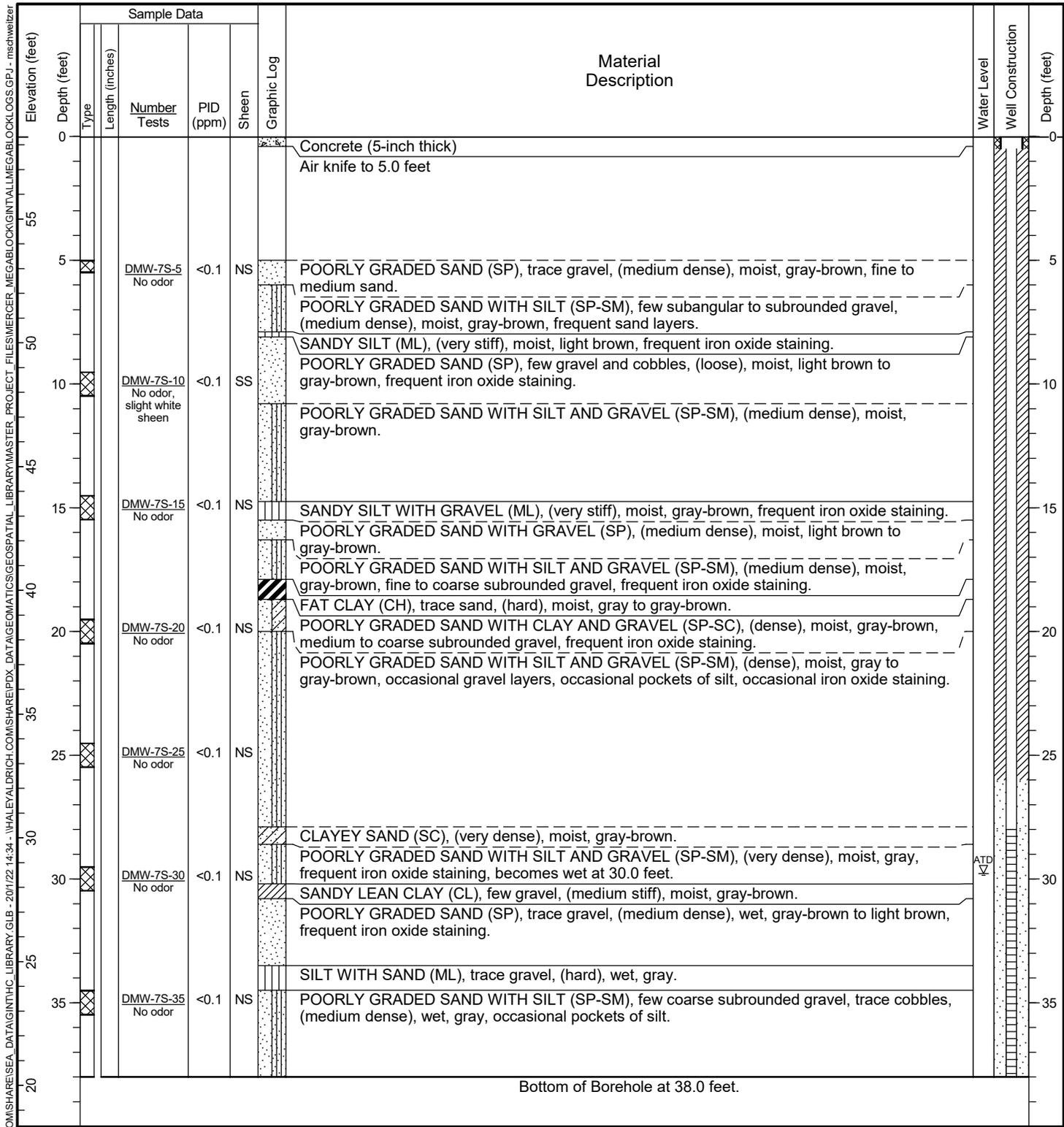
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.



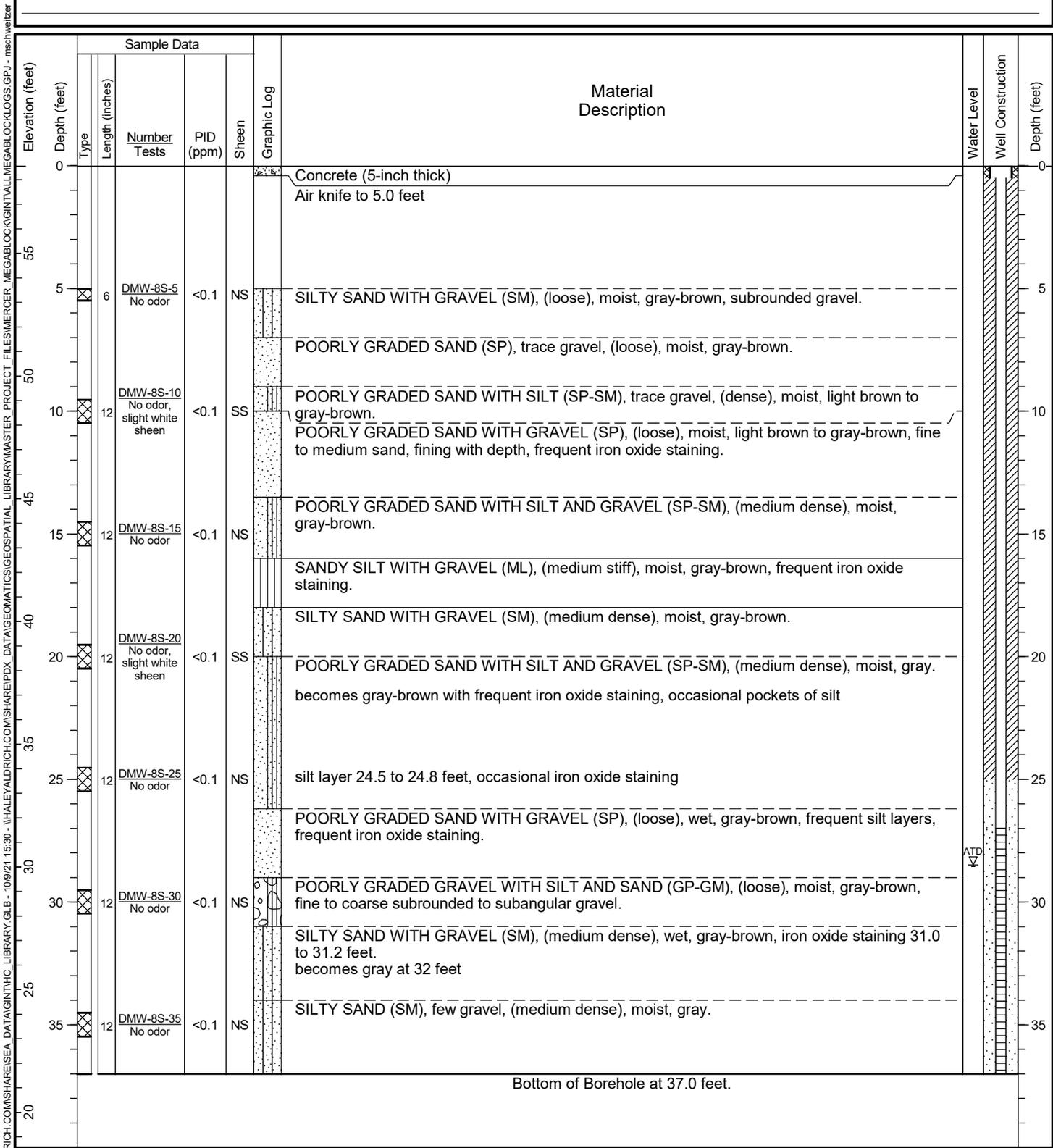
Date Started: 10/26/2020 Date Completed: 10/26/2020 Contractor/Crew: AEC / Jeffrey  
 Logged by: B. Lytle/J. Vanderwal Checked by: C. Kroskie Rig Model/Type: TSi 150CC / Track-mounted drill rig  
 Location: Lat: 47.625135 Long: -122.342539 (WGS 84) Hole Diameter: 4 inches Well Casing Diameter: OD: 2 inches  
 Ground Surface Elevation: 58.34 feet (NAVD 88) Total Depth: 38 feet Depth to Groundwater: 29.78 feet  
 Comments: Well Tag ID: BLY430



General Notes:  
 1. Refer to Figure A1-1 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 approximate.

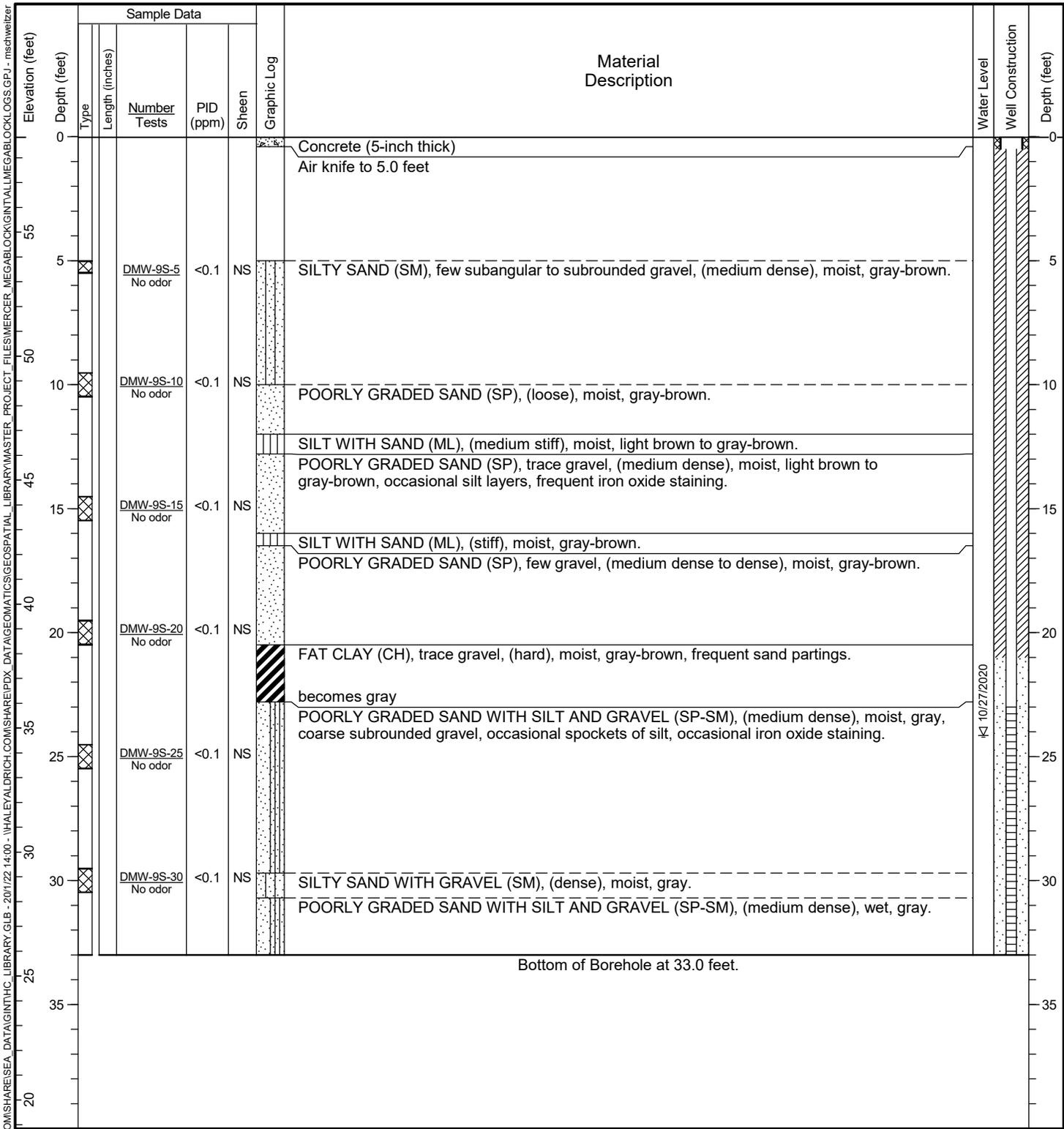
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Date Started: 27/10/20 Date Completed: 27/10/20 Contractor/Crew: AEC / Jeffrey  
 Logged by: B. Lytle/J. Vanderwal Checked by: C. Kroskie Rig Model/Type: TSi 150CC / Track-mounted drill rig  
 Location: Lat: 47.625080 Long: -122.342538 (WGS 84) Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Ground Surface Elevation: 58.57 feet (NAVD 88) Total Depth: 37 feet Depth to Groundwater: 28.49 feet  
 Comments: Well Tag ID: BLY431



General Notes:  
 1. Refer to Figure A1-1 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 approximate.

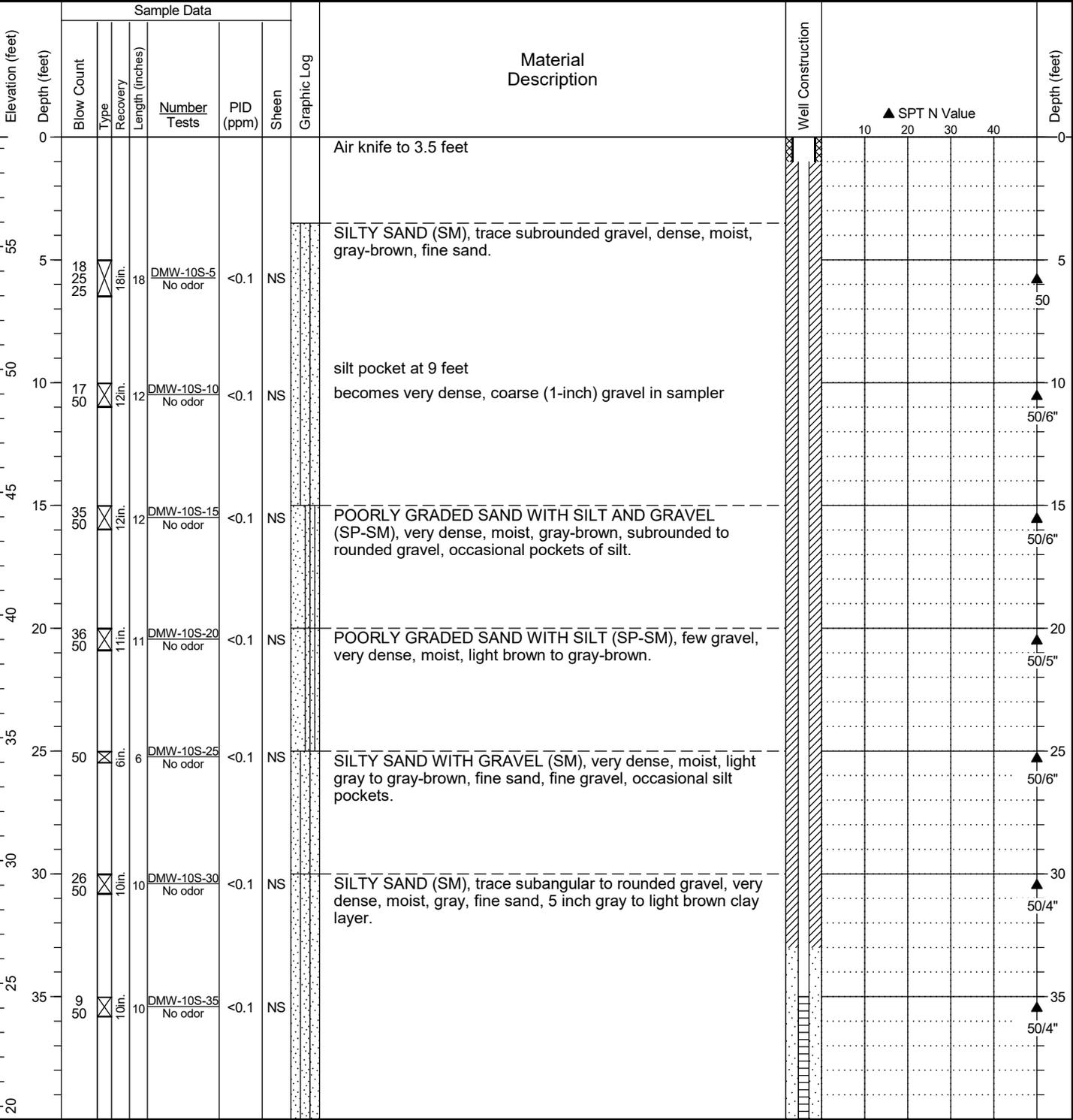
Date Started: 10/27/2020 Date Completed: 10/27/2020 Contractor/Crew: AEC / Jeffrey  
 Logged by: B. Lytle/J. Vanderwal Checked by: C. Kroskie Rig Model/Type: TSi 150CC / Track-mounted drill rig  
 Location: Lat: 47.624983 Long: -122.342536 (WGS 84) Hole Diameter: 4 inches Well Casing Diameter: OD: 2 inches  
 Ground Surface Elevation: 58.85 feet (NAVD 88) Total Depth: 33 feet Depth to Groundwater: 24.15 feet  
 Comments: Well Tag ID: BLY432



General Notes:  
 1. Refer to Figure A1-1 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 approximate.

Date Started: 19/10/20 Date Completed: 19/10/20 Drilling Contractor/Crew: Holocene Drilling, Inc. / Jo and Levi  
 Logged by: B. Lytle/B. Dozier Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624886 Long: -122.342593 (WGS 84) Rig Model/Type: Diedrich D-50 / Track-mounted drill rig  
 Ground Surface Elevation: 59.46 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BNF363 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Total Depth: 55.3 feet Depth to Groundwater: Not Identified

HC BORING LOG - I:\TP-DC\HALEYALDRICH\COM\SHARE\SEA\_DATA\GINT\HC\_LIBRARY\GLB - 109\21\15\31 - I\HALEYALDRICH\COM\SHARE\PD\DATA\GEO\GINT\GEO\SPATIAL\_LIBRARY\MASTER\_PROJECT\_FILES\MERCER\_MEGABLOCK\GINT\ALLMEGABLOCKS.GPJ - mschwartz



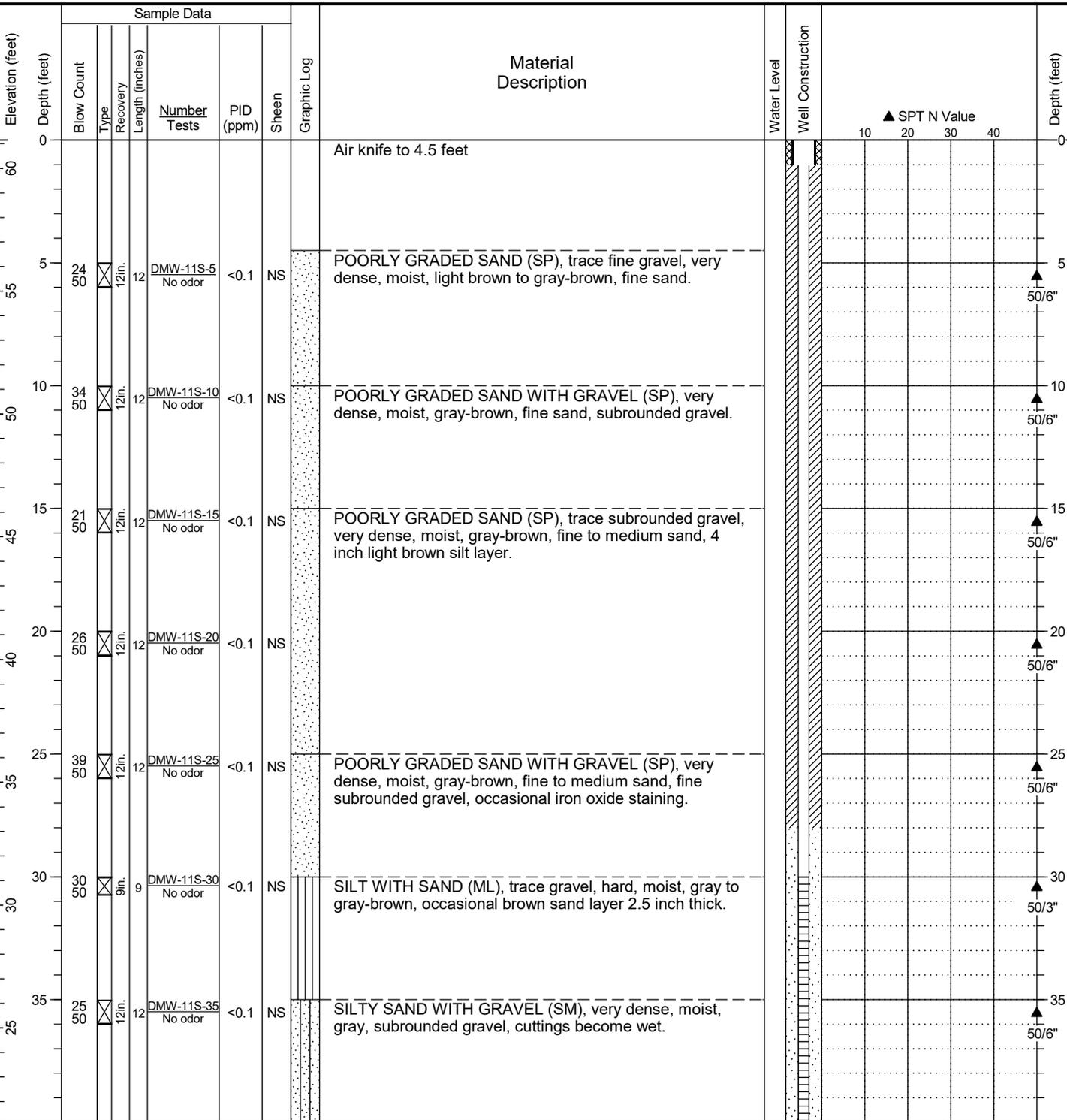
**General Notes:**

1. Refer to Figure A1-1 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 approximate.



Date Started: 19/10/20 Date Completed: 20/10/20 Drilling Contractor/Crew: Holocene Drilling, Inc. / Jo and Levi  
 Logged by: B. Lytle/B. Dozier Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624905 Long: -122.342682 (WGS 84) Rig Model/Type: Diedrich D-50 / Track-mounted drill rig  
 Ground Surface Elevation: 61.15 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BNF365 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Total Depth: 55.2 feet Depth to Groundwater: 55 feet

HC BORING LOG - I:\TP-DC\HALEYALDRICH\DATA\GINT\ALLMEGABLOCKS\GPI - mschwitzer  
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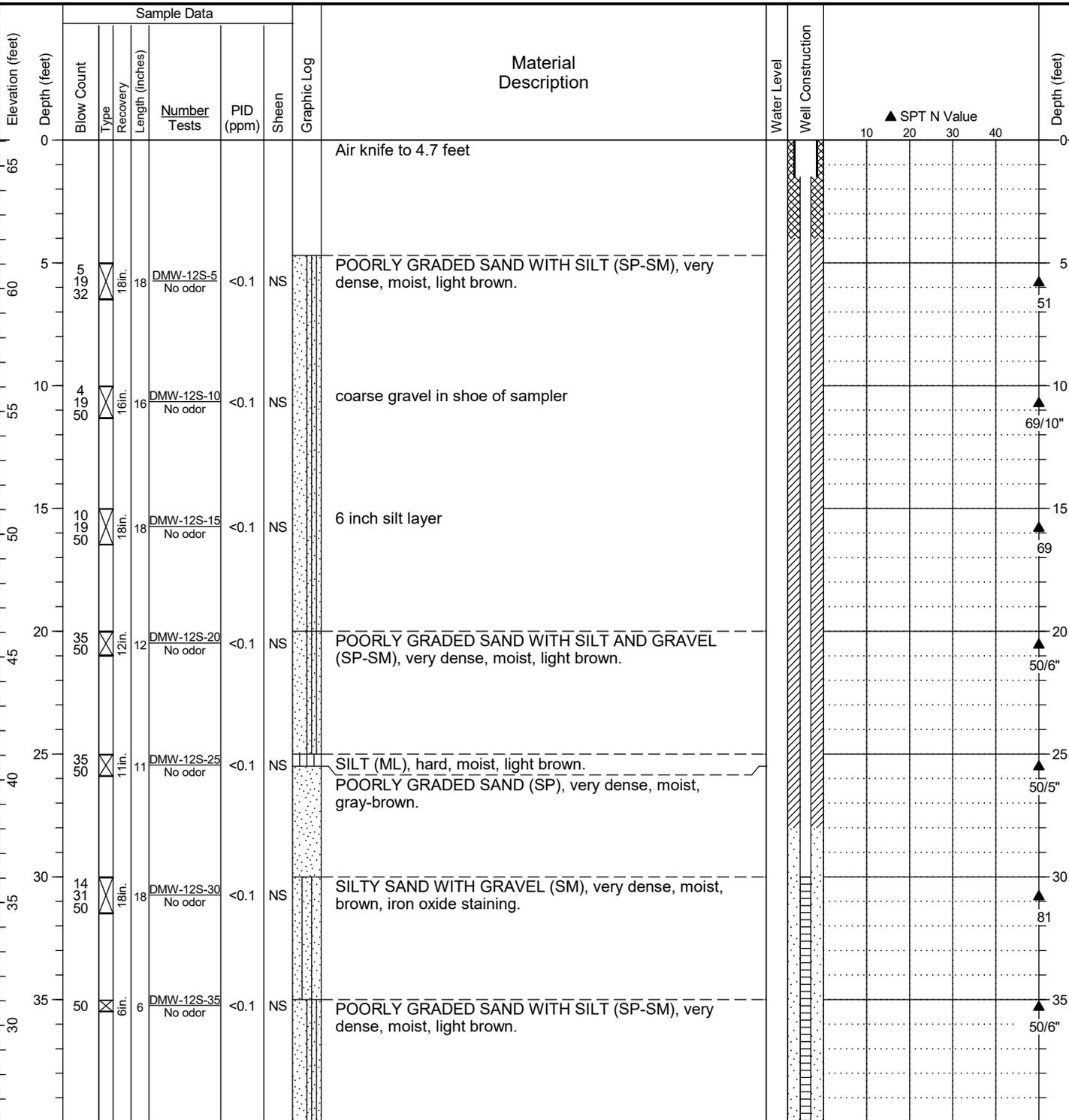


- General Notes:
1. Refer to Figure A1-1 for explanation of descriptions and symbols.
  2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
  3. USCS designations are based on visual-manual 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 approximate.



Date Started: 20/10/20 Date Completed: 20/10/20 Drilling Contractor/Crew: Holocene Drilling, Inc. / Jo and Levi  
 Logged by: B. Dozier Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625002 Long: -122.342965 (WGS 84) Rig Model/Type: Diedrich D-50 / Track-mounted drill rig  
 Ground Surface Elevation: 66.05 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BNF364 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Total Depth: 55.5 feet Depth to Groundwater: 55 feet

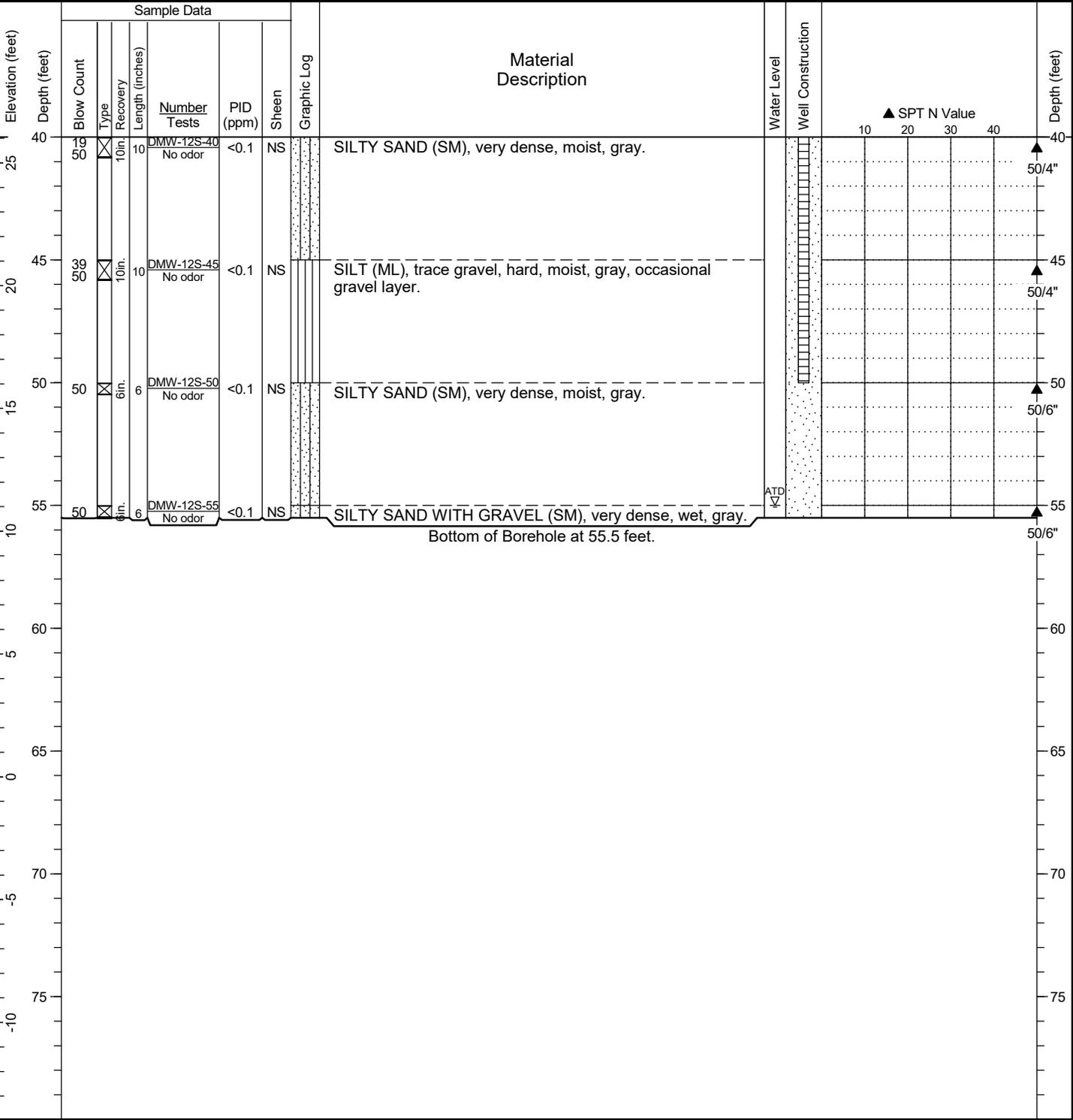
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- General Notes:
- Refer to Figure A1-1 for explanation of descriptions and symbols.
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  - USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
  - Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
  - Location and ground surface elevations are approximate.

Date Started: 20/10/20 Date Completed: 20/10/20 Drilling Contractor/Crew: Holocene Drilling, Inc. / Jo and Levi  
 Logged by: B. Dozier Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.625002 Long: -122.342965 (WGS 84) Rig Model/Type: Diedrich D-50 / Track-mounted drill rig  
 Ground Surface Elevation: 66.05 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BNF364 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Total Depth: 55.5 feet Depth to Groundwater: 55 feet

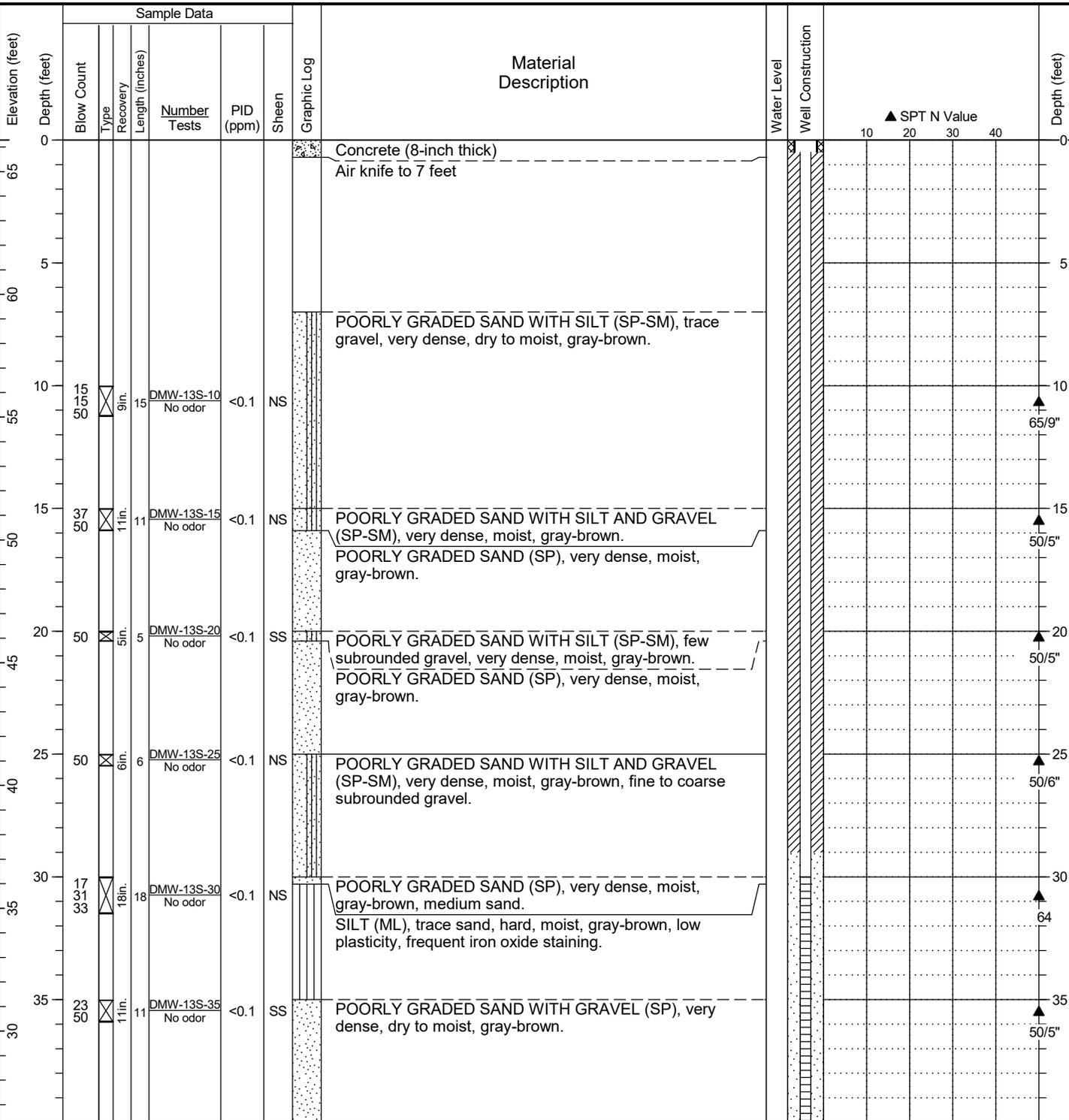
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General Notes:  
 1. Refer to Figure A1-1 for explanation of descriptions and symbols.  
 2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate 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 approximate.

Date Started: 23/10/20 Date Completed: 23/10/20 Drilling Contractor/Crew: Holt Services, Inc. / Abe  
 Logged by: B. Lytle/J. Vanderwal Checked by: C. Kroskie Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624995 Long: -122.343141 (WGS 84) Rig Model/Type: Mobile B-57 / Track-mounted drill rig  
 Ground Surface Elevation: 66.28 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: Well Tag ID: BMP376 Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): Not Available  
 Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Total Depth: 50.4 feet Depth to Groundwater: 48.4 feet

HC BORING LOG - I:\TPC\DC\HALEYALDRICH\DATA\GINT\HC\_LIBRARY\GLB - 10/9/21 15:31 - \HALEYALDRICH\COM\SHARE\PROJECT\_FILES\MERCER\_MEGABLOCK\GINT\ALLMEGABLOCKS.GPJ - mschwartz



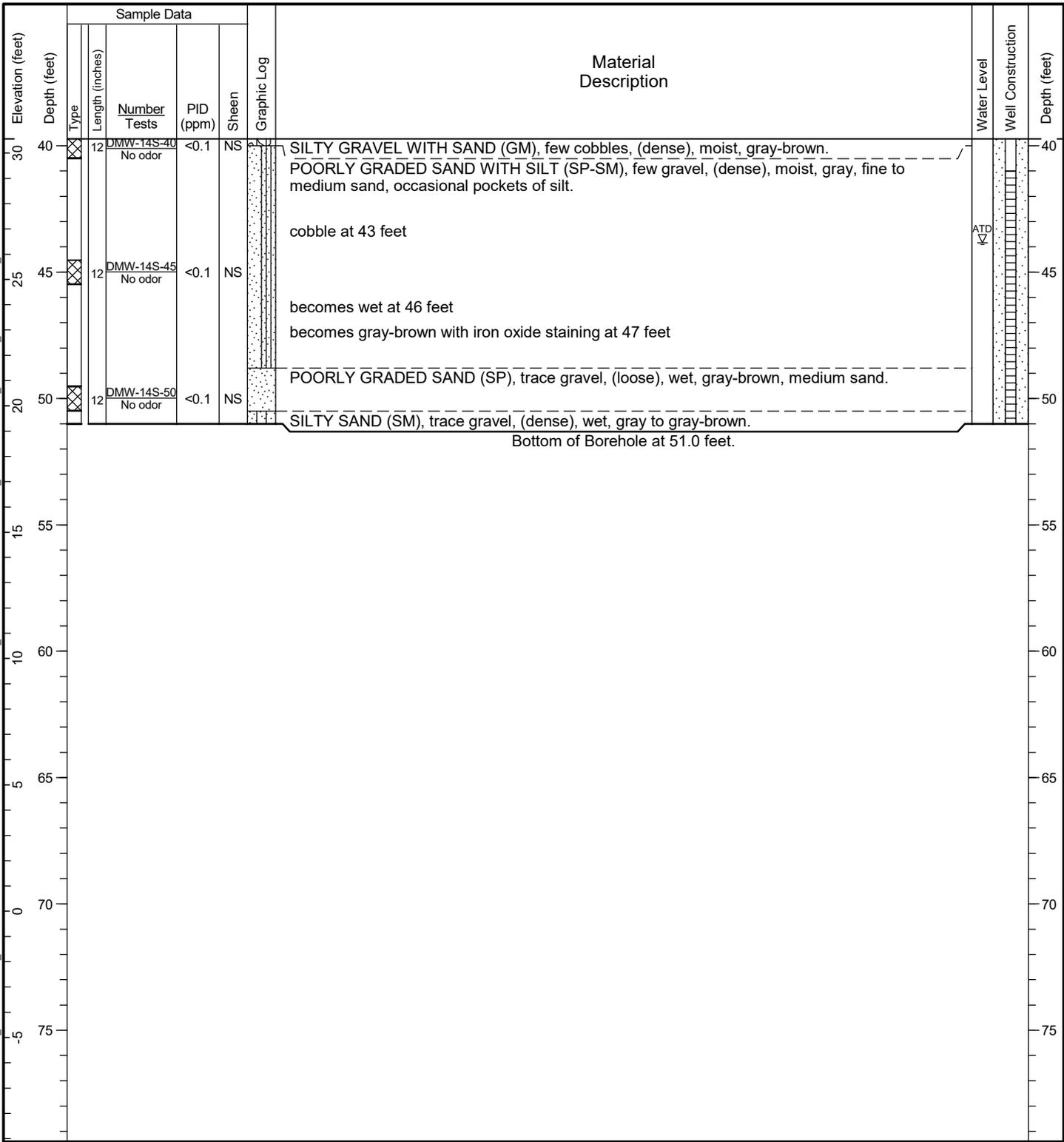
- General Notes:
1. Refer to Figure A1-1 for explanation of descriptions and symbols.
  2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
  3. USCS designations are based on visual-manual 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 approximate.





Date Started: 28/10/20 Date Completed: 28/10/20 Contractor/Crew: AEC / Jeffrey  
 Logged by: B. Lytle Checked by: C. Kroskie Rig Model/Type: TSi 150CC / Track-mounted drill rig  
 Location: Lat: 47.624982 Long: -122.343392 (WGS 84) Hole Diameter: 4 inches Casing Diameter: OD: 2 inches  
 Ground Surface Elevation: 70.29 feet (NAVD 88) Total Depth: 51 feet Depth to Groundwater: 43.84 feet  
 Comments: Well Tag ID: BLY433

HC PUSH PROBE - \\TP-DC-HALEYALDRICH.COM\SHARE\SEA\_DATA\GINT\HC\_LIBRARY\GLB - 10/9/21 15:31 - \\HALEYALDRICH.COM\SHARE\IPDX\_DATA\GEO\MATICS\GEO\S\PATIAL\_LIBRARY\MASTER\_PROJECT\_FILES\MERCER\_MEGABLOCK\GINT\ALL\_MEGABLOCKLOGS.GPJ - mschweitzer



General Notes:

1. Refer to Figure A1-1 for explanation of descriptions and symbols.
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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 approximate.

**APPENDIX A2**  
**Boring Logs and Well Installation Diagrams**  
**(Previous Investigations)**

# LOG OF GEOPROBE

Date Started	4/21/17	Location	North, Central Corner of Building	Ground Elevation:	Approx. NA feet
Date Completed	4/21/17			Typical Run Length	5 feet
Total Depth (ft)	30.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
5		<i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
		Gray-brown, <i>Poorly Graded Sand (SP)</i> ; moist.	22.0	0		During Drilling		
		Gray-brown, <i>Silty Sand (SM)</i> ; moist at 24 feet, wet at 25.5 feet.	24.0	0			21417-GP1:25	25
25	6						21417-GP1:GW	
30		BOTTOM OF GEOPROBE COMPLETED 4/21/2017	30.0					30
35								35

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery
- 2" Plastic Tube with Soil Recovery
- Run No.
- Ground Water Level ATD

Mercer Corridor Project 615 Dexter Avenue N Phase II Seattle, Washington	
<b>LOG OF GEOPROBE 21417-GP1</b>	
January 2018	21-1-21417-207
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. A-2</b> Sheet 2 of 2

GEOPROBE WELL 21-21417-207.GPJ 21-20447.GPJ 12/27/17 Log: BON Rev: BON Typ: LKN

# LOG OF GEOPROBE

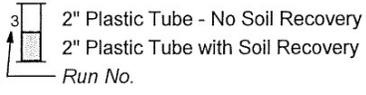
Date Started	4/21/17	Location	Center of E Side of Building	Ground Elevation:	Approx. NA feet
Date Completed	4/21/17			Typical Run Length	5 feet
Total Depth (ft)	19.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Concrete.						
		Gray-brown, <i>Poorly Graded Sand (SP)</i> with trace gravel; dry.	0.8					
		Light gray and brown, <i>Silty Sand (SM)</i> with few gravels; dry.	2.0		0.1			
	2	Gray-brown, <i>Poorly Graded Sand (SP)</i> with trace gravels; dry.	5.0			None Observed During Drilling		
		Light gray and brown, <i>Silty Sand (SM)</i> with few gravels; dry.	7.0		0			
	3	Light gray and brown, <i>Silty Sand (SM)</i> with few gravels; moist at 13 feet.	10.0		0.1			
	4	Light gray and brown, <i>Poorly Graded Sand (SP)</i> ; moist; subrounded.	17.0		0.1			
		<i>Silty Sand (SM)</i> .	18.0				21417-GP2:18	
		BOTTOM OF GEOPROBE COMPLETED 4/21/2017	19.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND



Mercer Corridor Project 615 Dexter Avenue N Phase II Seattle, Washington	
<b>LOG OF GEOPROBE 21417-GP2</b>	
January 2018	21-1-21417-207
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. A-3</b>

GEOPROBE WELL 21-21417-207.GPJ 21-20447.GPJ 12/27/17  
 Typ: LKN  
 Rev: BOW  
 Log: BOW

# LOG OF GEOPROBE

Date Started	4/21/17	Location	Lower Parking Lot, N Side	Ground Elevation:	Approx. NA feet
Date Completed	4/21/17			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		<b>Soil Description</b> <i>Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.</i>						
	1	Concrete.	0.8					
		Light gray-brown, <i>Silty Sand (SM)</i> with few gravels getting harder with depth; moist at 14 feet; wet at 15.5 feet.						
5	2				0			5
					0			
10	3				0.1			10
					0	During Drilling ▽	21417-GP3:15.5	15
15	4				0			15
							21417-GP3:GW	20
20		BOTTOM OF GEOPROBE COMPLETED 4/21/2017	20.0					20

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Mercer Corridor Project 615 Dexter Avenue N Phase II Seattle, Washington	
<b>LOG OF GEOPROBE 21417-GP3</b>	
January 2018	21-1-21417-207
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. A-4</b>

GEOPROBE WELL 21-21417-207.GPJ 21-20447.GPJ 12/27/17 Log: BOW Rev: BOW Typ: LKN

# LOG OF GEOPROBE

Date Started	4/21/17	Location	Lower Parking Lot, S Side	Ground Elevation:	Approx. NA feet
Date Completed	4/21/17			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Concrete.						
		Gray-brown, <i>Silty Sand (SM)</i> with few gravels; dry.	0.8		0			
		Light gray-brown, <i>Silty Sand (SM)</i> with little gravels; trace moisture at 4 feet.	3.0					
	2	Gray-brown, <i>Silty Sand (SM)</i> with little gravels; dry; moist at 10 feet.	5.0		0			
		Light gray, <i>Silty Sand (SM)</i> ; wet; strong hydrocarbon odor.	12.0		0.2	∇ During Drilling	21417-GP4:12	
	3	BOTTOM OF BORING COMPLETED 4/21/2017	15.0				21417-GP4:15 21417-GP4:GW	

**NOTES**

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

**LEGEND**

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Run No.
- Ground Water Level ATD

Mercer Corridor Project  
615 Dexter Avenue N Phase II  
Seattle, Washington

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**LOG OF GEOPROBE 21417-GP4**

January 2018 21-1-21417-207

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**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

FIG. A-5

GEOPROBE WELL: 21-21417-207.GPJ 21-20447.GPJ 12/27/17  
 Log: BON  
 Rev: BON  
 Typ: LKN

# LOG OF GEOPROBE

Date Started	5/19/17	Location	Eastern End of Alley Near Drain	Ground Elevation:	Approx. NA feet
Date Completed	5/19/17			Typical Run Length	5 feet
Total Depth (ft)	16.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

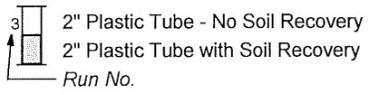
Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
5		Air-knife through 0.8 foot of concrete and olive-brown, coarse, Poorly Graded Sand (SP). (Fill)		•••••		None Observed During Drilling	21417-GP5:1	5
10	1	Olive, Silty Sand (SM) with little gravels, getting harder with depth; moist seam at 14 feet.	6.0	•••••	0			10
15	2			•••••	0		212417-GP5:14	15
		BOTTOM OF GEOPROBE COMPLETED 5/19/2017	16.0					

 GEOPROBE WELL: 21-21417-207.GPJ 21-20447.GPJ 12/27/17  
 Log: BON  
 Rev: BON  
 Typ: LKN

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND



Mercer Corridor Project  
615 Dexter Avenue N Phase II  
Seattle, Washington

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**LOG OF GEOPROBE 21417-GP5**

January 2018 21-1-21417-207

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<b>SHANNON &amp; WILSON, INC.</b> <small>Geotechnical and Environmental Consultants</small>	<b>FIG. A-6</b>
--	-----------------

# LOG OF GEOPROBE

Date Started	5/19/17	Location	Alley Near SE Corner of Building	Ground Elevation:	Approx. NA feet
Date Completed	5/19/17			Typical Run Length	5 feet
Total Depth (ft)	20.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Air-knife through 0.8 foot of Concrete and Fill.				None Observed During Drilling		
	1	Olive, Silty Sand (SM) with few gravels; moist at 8 feet.	7.0		0			
	2	Olive, Silty Sand (SM) with few gravels; coarser than above; dry.	10.0		0			
	3	Olive, Silty Sand (SM) with few gravels; slightly moist at 18 feet.	15.0		0		21417-GP6:18	
		BOTTOM OF GEOPROBE COMPLETED 5/19/2017	20.0					

NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

LEGEND

- 2" Plastic Tube - No Soil Recovery

2" Plastic Tube with Soil Recovery

Run No.

Mercer Corridor Project  
615 Dexter Avenue N Phase II  
Seattle, Washington

## LOG OF GEOPROBE 21417-GP6

January 2018

21-1-21417-207

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants

**FIG. A-7**

GEOPROBE WELL 21-21417-207.GPJ 21-20447.GPJ 12/27/17 Log: BON Rev: BON Typ: LKN

# LOG OF GEOPROBE

Date Started	5/19/17	Location	Alley Near Center of Building	Ground Elevation:	Approx. NA feet
Date Completed	5/19/17			Typical Run Length	5 feet
Total Depth (ft)	15.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		Air-knife through 0.8 foot of Concrete and Fill, one brick was seen in Fill, multiple cobbles.				None Observed During Drilling	21417-GP7:2	
	1	Olive, Silty Sand (SM) with little gravels; moist at 9 feet.	7.0	[Symbol]	0			
	2	Olive, fine, Silty Sand (SM) with few gravels; dry.	10.0	[Symbol]	0			
		Coarse Sand (SP) lense with slightly brown/black shiny stain; dry.	12.0	[Symbol]	0			
		Fine, Silty Sand (SM); dry.	13.0	[Symbol]	0		21417-GP7:13	
		BOTTOM OF GEOPROBE COMPLETED 5/19/2017	15.0					

 GEOPROBE WELL: 21-21417-207.GPJ 21-20447.GPJ 12/27/17  
 Typ: LKN  
 Rev: BON  
 Log: BON

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

3. 2" Plastic Tube with Soil Recovery
  - 2" Plastic Tube - No Soil Recovery
- Run No.

Mercer Corridor Project  
615 Dexter Avenue N Phase II  
Seattle, Washington

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**LOG OF GEOPROBE 21417-GP7**

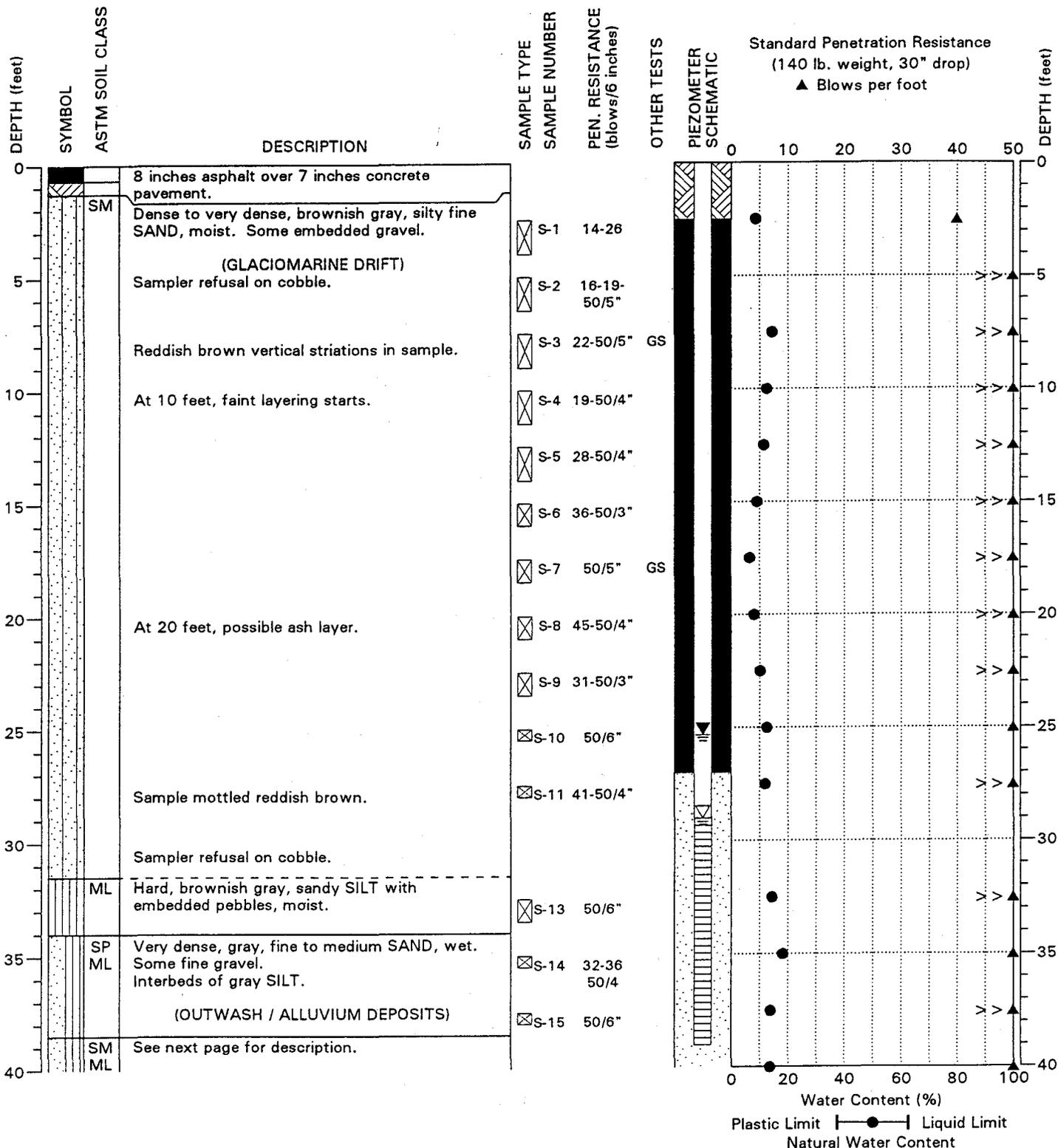
January 2018
21-1-21417-207

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**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants
**FIG. A-8**

DRILLING COMPANY: Hokkaido Drilling  
 DRILLING METHOD: B-61 Mobile, 4.5" ID HSA  
 SURFACE ELEVATION: 153 ± Feet

LOCATION:  
 DATE COMPLETED: 8/29/97  
 LOGGED BY: GWE



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BB-10

**HWA** Denny Way / Lake Union CSO, Contract B  
 Seattle, Washington  
**HWA GEOSCIENCES INC.**

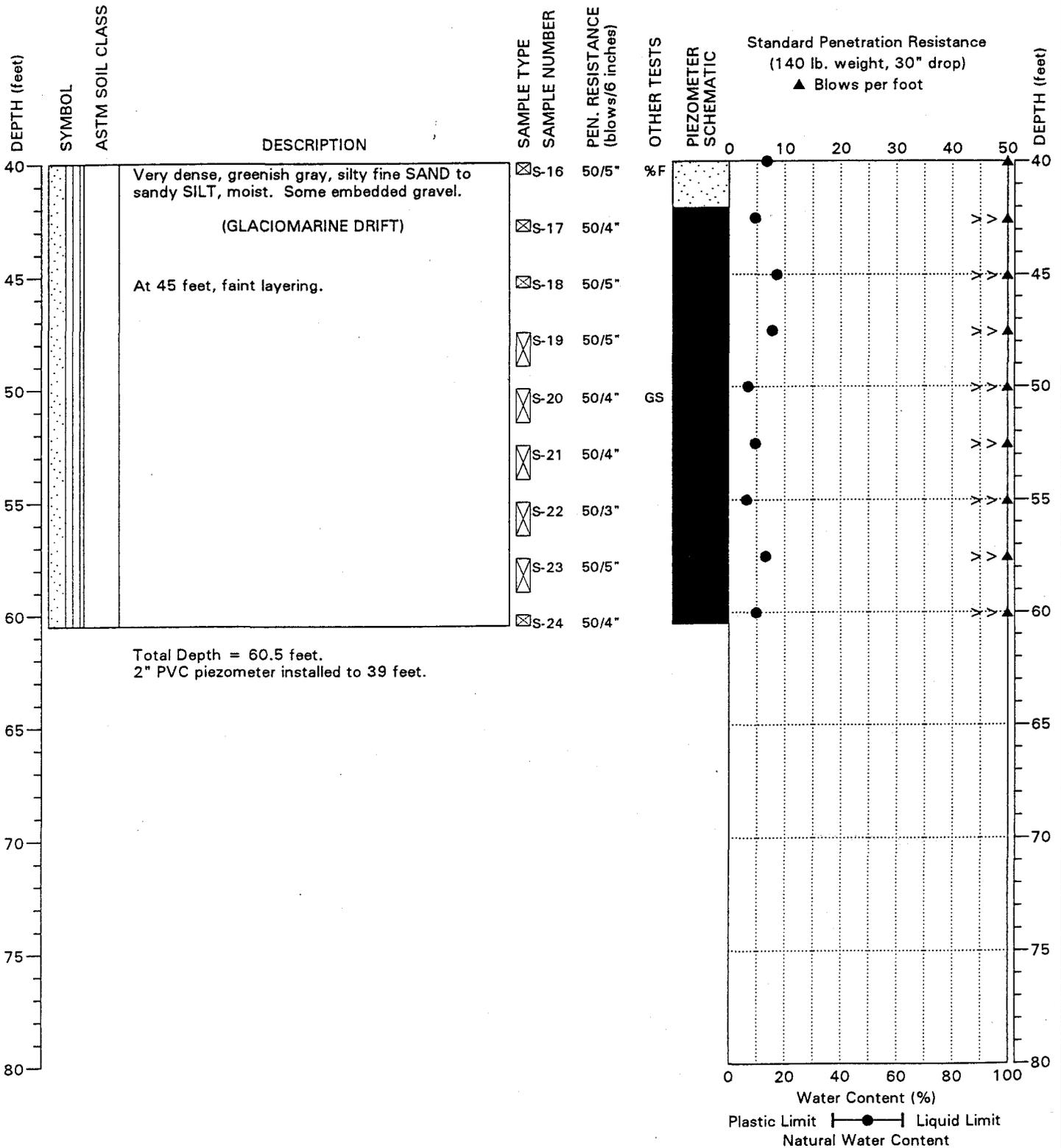
PAGE: 1 of 2

PROJECT NO.: 97061

FIGURE: A-10

DRILLING COMPANY: Hokkaido Drilling  
 DRILLING METHOD: B-61 Mobile, 4.5" ID HSA  
 SURFACE ELEVATION: 153 ± Feet

LOCATION:  
 DATE COMPLETED: 8/29/97  
 LOGGED BY: GWE



NOTE: This log of subsurface conditions applies only at the specified location and on the date indicated and therefore may not necessarily be indicative of other times and/or locations.

BORING: BB-10

**HWA** Denny Way / Lake Union CSO, Contract B  
 HWAGEOSCIENCES INC. Seattle, Washington

PAGE: 2 of 2

PROJECT NO.: 97061

FIGURE: A-10

USC	SOIL DESCRIPTION Surface Elevation: 50.5 ft.	DEPTH, ft.	SAMPLES	GROUND WATER	DEPTH, ft.	STANDARD PENETRATION RESISTANCE (140 lb. weight, 30" drop) ▲ Blows per foot	
						0	60
SM	Very dense, brown-gray, silty to very silty, fine to coarse SAND with some gravel and some layers of clean to slightly silty sand	0	A I		0	15/0"	53/0"
			B II			50/5"	
			C II			50/5"	
			D I			13/0"	50/5"
			E II			50/4"	
			F II			53/0"	
SM	Very dense, gray, very silty, fine to medium SAND with some gravel (TILL)	20	G II		30	50/3"	
			H II			101/0"	
SM ML	Very dense, gray, very silty, fine to medium SAND grading to hard, slightly clayey SILT	40	I II		40	50/5"	
			J II			50/3"	
Bottom of Boring Completed 4/2/70		48.0			50		

**LEGEND**

- I 2.0" O.D. split spoon sample
- II 3.0" O.D. thin-wall sample
- Sample not recovered



- Impervious seal
- Water level
- Piezometer tip
- P Sampler pushed
- USC Unified Soil Classification

N None in auger

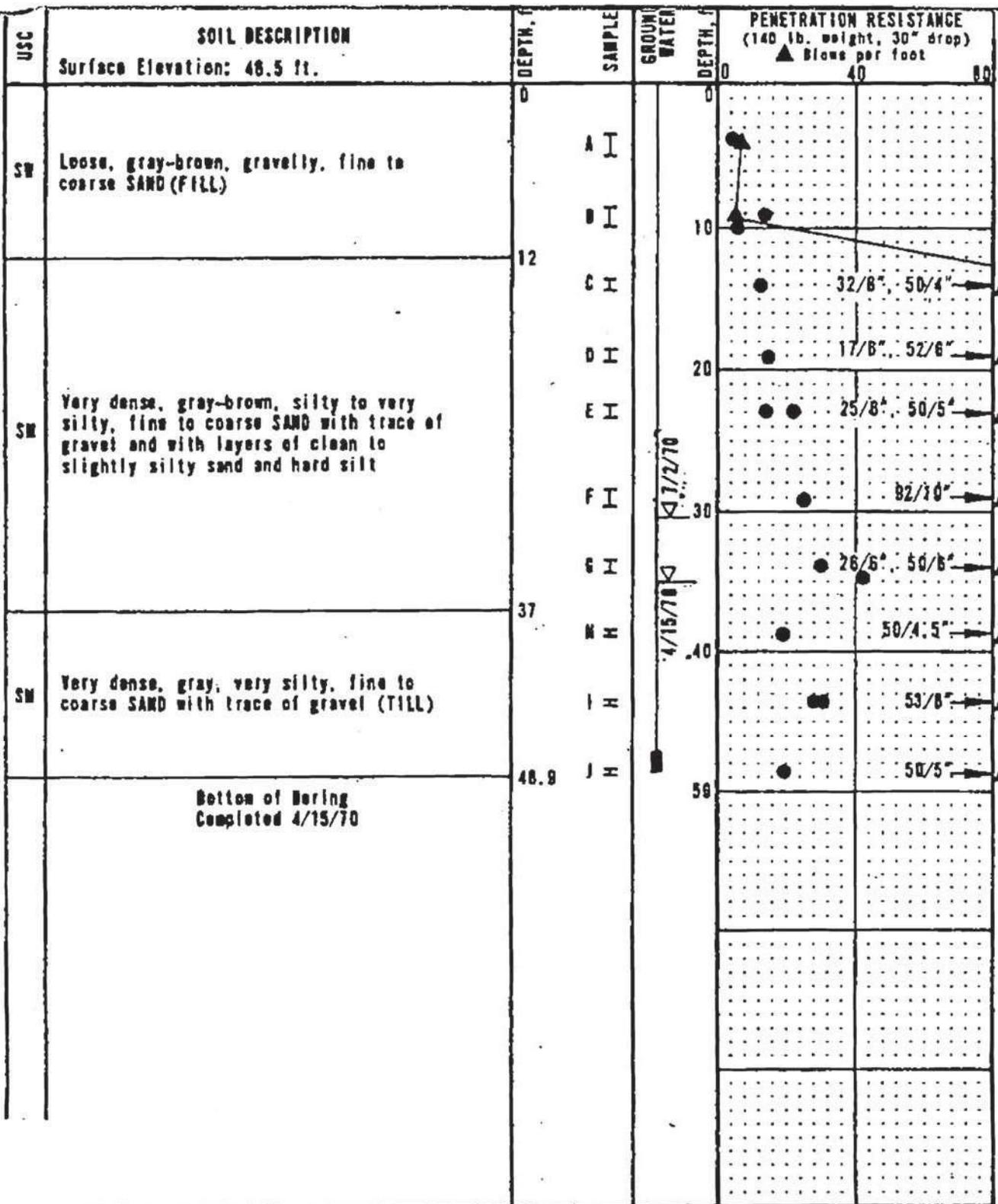
● % Water content

CITY OF SEATTLE  
DAY FREEWAY

**LOG OF BORING NO. B-309**

FEB. 12, 1971 W-1050

SHANNON & WILSON, INC.  
SOIL MECHANICS & FOUNDATION ENGINEERS



LEGEND

- I 2.0" O.D. split spoon sample
- II 3.0" O.D. thin-wall sample
- Sample not recovered
- Atterberg limits:
  - Liquid limit
  - Natural water content
  - Plastic limit
- Impervious seal
- Water level
- Piezometer tip
- P Sampler pushed
- USC Unified Soil Classification

● % Water content

CITY OF SEATTLE  
 BAY FREEWAY

LOG OF BORING NO. B-320-71

FEB. 12, 1971 W-1058

SHANNON & WILSON, INC.  
 SOIL MECHANICS & FOUNDATION ENGINEERS

# LOG OF GEOPROBE

Date Started	5/14/12	Location	South end of utility trench in Dexter north of Broad Street.	Ground Elevation:	Approx. NA feet
Date Completed	5/14/12			Typical Run Length	4 feet
Total Depth (ft)	11.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		CONCRETE	0.5				GP-7-0-7	
		Dark gray/brown, slightly sandy SILT, trace of gravel; moist; ML.	1.2					
		Light gray/brown, slightly silty, gravelly SAND; moist; SW-SM.						
5	G							5
		Gray, slightly silty to silty, medium to fine SAND, trace of fine gravel; moist; SW-SM/SM.	7.8				GP-7-7-11	
10	G							10
		BOTTOM OF GEOPROBE COMPLETED 5/14/2012	11.0					
		- Refusal at 11 feet.						

Log: CMJ  
 Rev: CMJ  
 Typ: CLP  
 GEOPROBE 21-21417 GPJ 21-16604 GPJ 8/22/12

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- |  |                                    |
|--|------------------------------------|
|  | 2" Plastic Tube - No Soil Recovery |
|  | 2" Plastic Tube with Soil Recovery |
|  | Estimated Water Level              |
- Run No.

Mercer West Limited Environmental Characterization Report Seattle, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE GP-7</h2>	
August 2012	21-1-21417-130
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. A-8</b>

# LOG OF GEOPROBE

Date Started	5/14/12	Location	South end of utility trench in Dexter north of Broad Street.	Ground Elevation:	Approx. NA feet
Date Completed	5/14/12			Typical Run Length	4 feet
Total Depth (ft)	12.0	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		Refer to the report text for a proper understanding of the subsurface materials and probing methods. The stratification lines indicated below represent the approximate boundaries between soil types. Actual boundaries may be different if soil shifted inside sample tubes during extraction.						
		CONCRETE	0.5				GP-8:0-7	
		Gray to dark gray, slightly to trace of silty, sandy GRAVEL; moist; GP-GW.						
		Light brown, slightly silty SAND; moist; SP-SM.	3.0					
		Light gray/brown, slightly to trace of silty, gravelly SAND; moist; SW.	3.8					
5	G							5
		Light brown/gray, slightly sandy to sandy SILT; moist; ML-SM/ML.	7.9				GP-8:7-12	
10	G							10
		BOTTOM OF GEOPROBE COMPLETED 5/14/2012	12.0					
		- Refusal at 12 feet.						

Log: CMJ Rev: CMJ Typ: CLP

GEOPROBE 21-21417.GPJ 21-16604.GPJ 8/22/12

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- |   |  |                                    |  |   |                       |
|---|--|------------------------------------|--|---|-----------------------|
| 3 |  | 2" Plastic Tube - No Soil Recovery |  | ▽ | Estimated Water Level |
|   |  | 2" Plastic Tube with Soil Recovery |  |   |                       |
- Run No.

Mercer West  
Limited Environmental Characterization Report  
Seattle, Washington

---

LOG OF GEOPROBE GP-8

August 2012
21-1-21417-130

<b>SHANNON &amp; WILSON, INC.</b> <small>Geotechnical and Environmental Consultants</small>	<b>FIG. A-9</b>
--	-----------------



# LOG OF GEOPROBE

Date Started	4/3/12	Location	Northwest corner of intersection of Thomas Avenue and Taylor Street.	Ground Elevation:	Approx. NA feet
Date Completed	4/3/12			Typical Run Length	4 feet
Total Depth (ft)	13.5	Drilling Company:	ESN Northwest	Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
	1	Dense, medium brown, slightly silty SAND, trace of gravel; moist to wet; SP-SM.		[Symbol]			GP-14:0-8	
	2	Dense, light brown, slightly silty SAND, trace of gravel; moist; SP-SM.	4.0	[Symbol]				5
	3	Medium dense, light brown, slightly silty SAND, trace of gravel; moist to wet; SP-SM.	7.0	[Symbol]			GP-14:8-13.5	
	4	Very dense, light brown to light gray, slightly silty SAND, trace of gravel, trace of asphalt; moist; SP-SM.	10.0	[Symbol]				10
	5	Very dense, dark gray, silty SAND, trace of gravel; moist; SM.	13.0	[Symbol]				
		BOTTOM OF GEOPROBE COMPLETED 4/3/2012	13.5					
		- Refusal at 13.5 feet.						15

Log: JML  
 Rev: CMJ  
 Typ: CLP  
 GEOPROBE 21-21417.GPJ 21-16604.GPJ 8/22/12

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- 2" Plastic Tube with Soil Recovery
- 2" Plastic Tube - No Soil Recovery
- Estimated Water Level
- Run No.

Mercer West Limited Environmental Characterization Report Seattle, Washington	
<h2 style="margin: 0;">LOG OF GEOPROBE GP-14</h2>	
August 2012	21-1-21417-130
<b>SHANNON &amp; WILSON, INC.</b> Geotechnical and Environmental Consultants	<b>FIG. A-15</b>



# LOG OF GEOPROBE

Date Started	4/5/12	Location	Auroroa Overpass - North. East End.
Date Completed	4/5/12	Ground Elevation:	Approx. NA feet
Total Depth (ft)	9.0	Typical Run Length	4 feet
Drilling Company:		ESN Northwest	
		Hole Diameter:	2 inches

Depth (ft)	Probe Run	Soil Description	Depth, ft.	Symbol	PID, ppm	Ground Water	Sample Number, Description, and Results	Depth (ft)
		CONCRETE	1.0				GP-20:0-8	
		Light brown to light gray, slightly sand to sandy SILT, trace of gravel; ML.	2.0					
		Light brown to light gray, slightly sandy to slightly sandy SILT, trace of gravel; ML.	4.0					
		Dark gray, slightly sandy SILT, trace of gravel; ML.	9.0				GP-20:8-9	
		BOTTOM OF GEOPROBE COMPLETED 4/5/2012						
		- Refusal at 9 feet.						

Log: JML  
 Rev: CMJ  
 Typ: CLP

GEOPROBE 21-21417.GPJ 21-16604.GPJ 8/22/12

### NOTES

1. In some cases where recovery was low in the upper part of the run, the soil sample may have slid down in the tube prior to removal from the ground.
2. Groundwater level, if indicated above, was estimated during probing and should be considered approximate.
3. Refer to KEY for definitions and explanation of symbols.
4. CT = corrosion test sample; TR = thermal resistivity sample; EN = environmental sample; GE = geotechnical sample; AR = archeological sample.

### LEGEND

- |  |  |
|--|--|
|  |  |
|--|--|

Mercer West  
 Limited Environmental Characterization Report  
 Seattle, Washington

## LOG OF GEOPROBE GP-20

August 2012

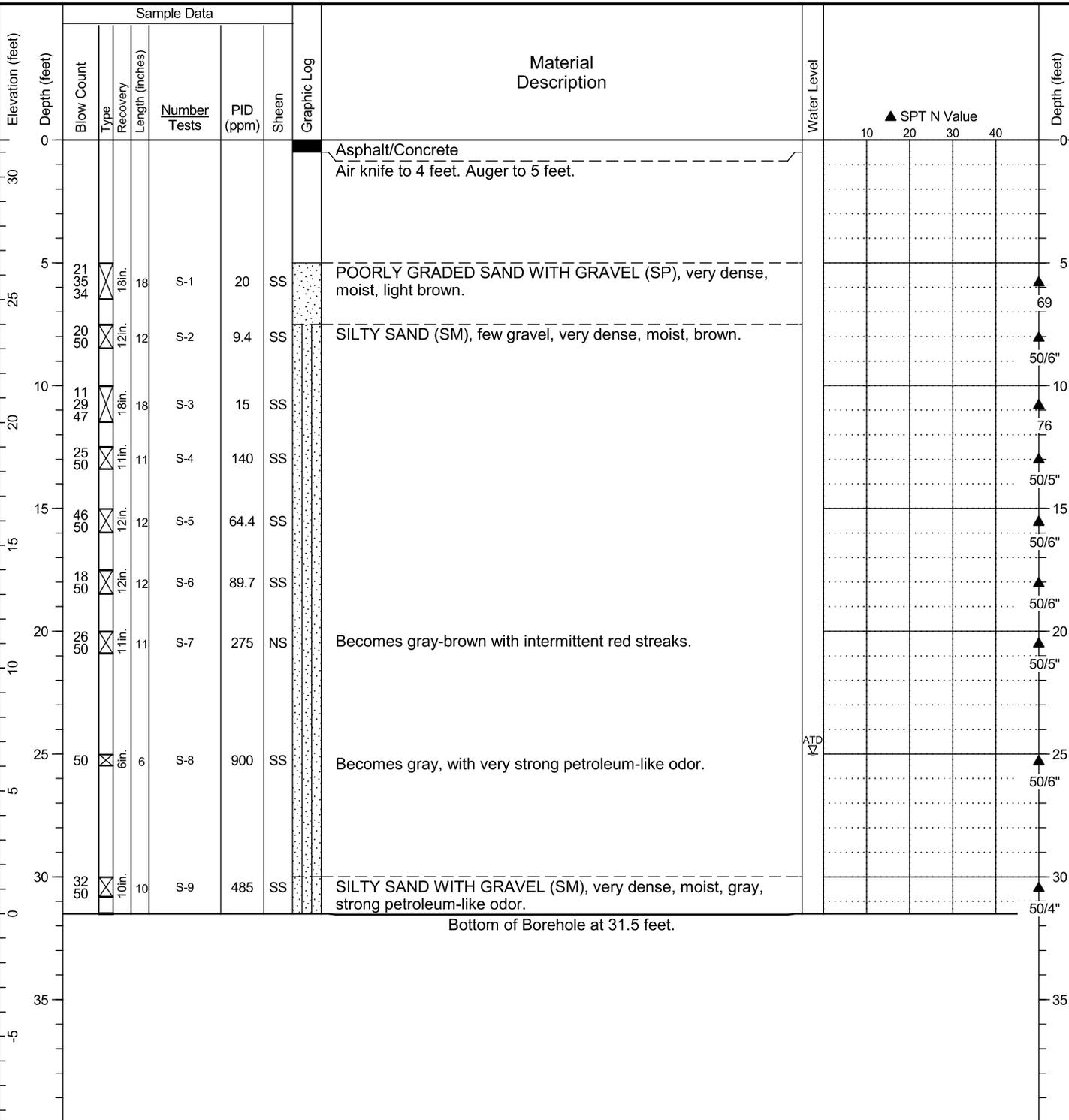
21-1-21417-130

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants

**FIG. A-21**

Date Started: 4/3/19 Date Completed: 4/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier/N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624988 Long: -122.342651 (WGS 84) Rig Model/Type: Truck-mounted drill rig  
 Ground Surface Elevation: 31.5 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: This boring was originally completed for the Phase II Environmental Assessment dated May 23, 2019. Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): NA  
 Hole Diameter: 6 inches Casing Diameter: NA  
 Total Depth: 31.5 feet Depth to Groundwater: 25 feet

HC BORING LOG - F:\GINT\HC LIBRARY\GLB - 4/20/20 11:12 - L:\NOTEBOOKS\1944901 601 DEXTER AVE NORTH DESIGN STUDY\FIELD DATA\PERM\_GINT FILES\1944900-BL-APR-2019-REV.GPJ - danielknapp



- General Notes:
1. Refer to Figure C-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 approximate.



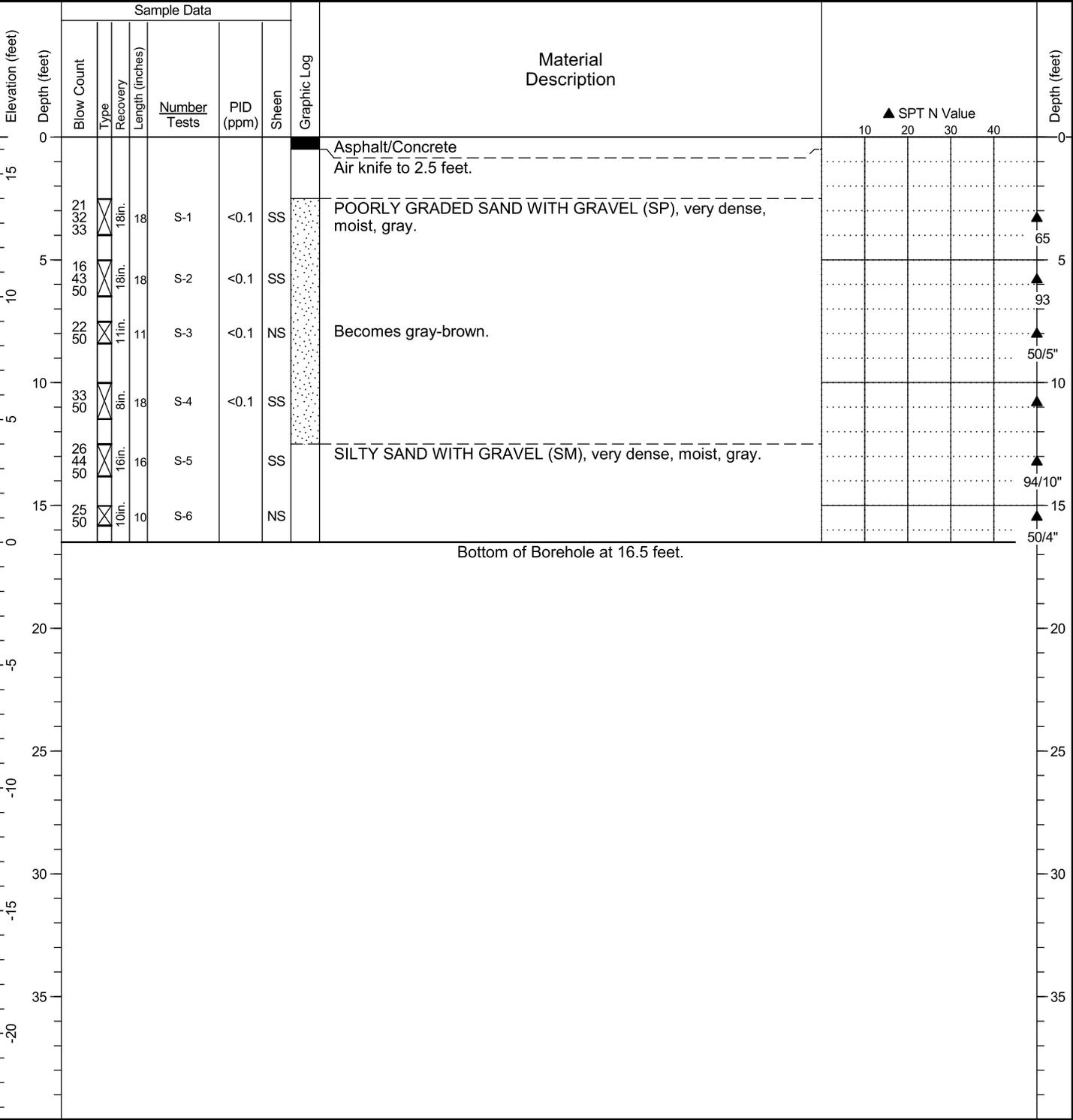
Project: 601 Dexter Avenue North Design Study  
 Location: Seattle, WA  
 Project No.: 19449-00

Boring Log  
**HC-1**

Figure **C-2**  
 Sheet **1 of 1**

Date Started: 4/3/19 Date Completed: 4/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier/N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624949 Long: -122.342844 (WGS 84) Rig Model/Type: Truck-mounted drill rig  
 Ground Surface Elevation: 16.5 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: This boring was originally completed for the Phase II Environmental Assessment dated May 23, 2019. Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): NA  
 Hole Diameter: 6 inches Casing Diameter: NA  
 Total Depth: 16.5 feet Depth to Groundwater: Not Identified

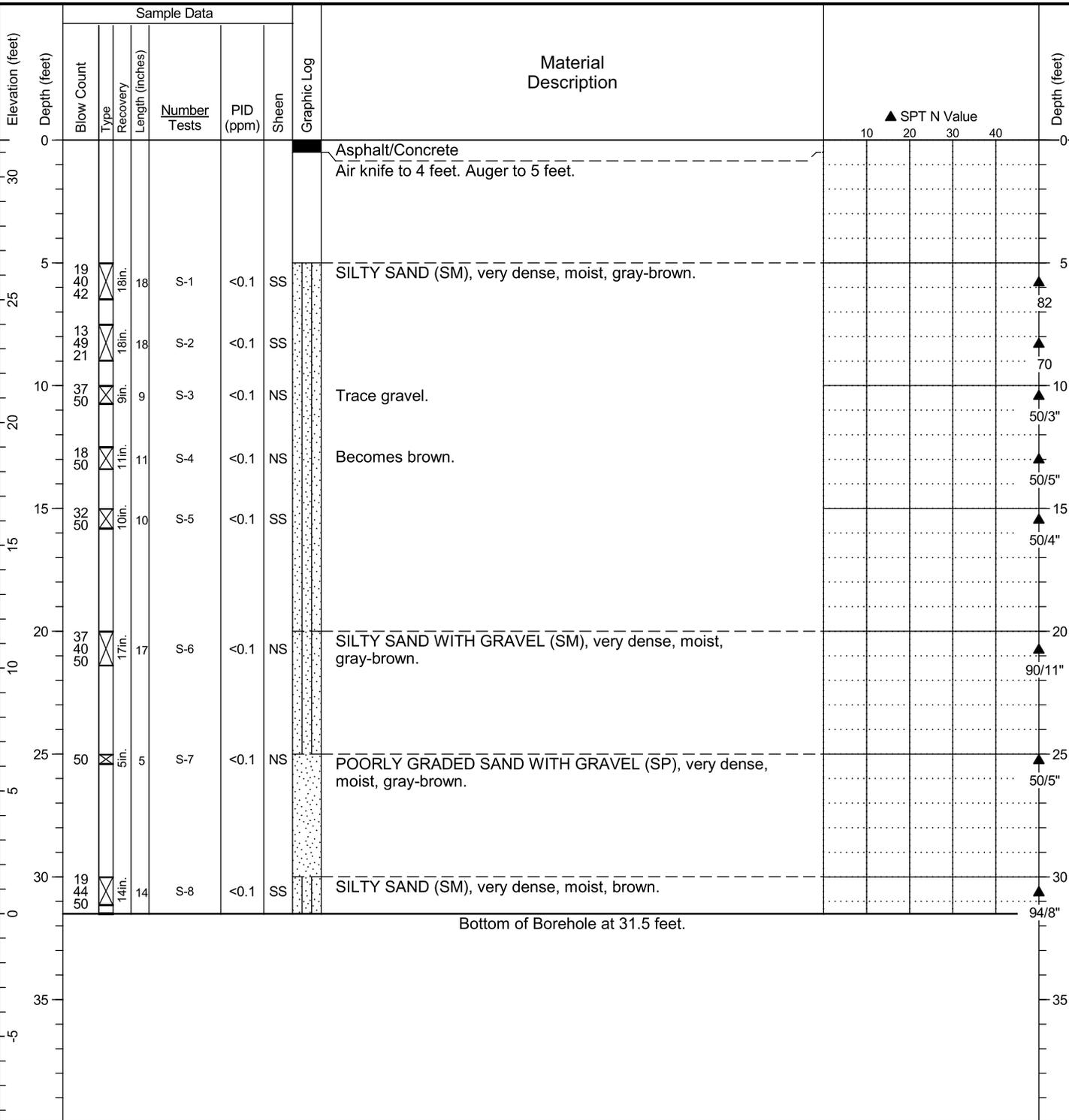
HC BORING LOG - F:\GINT\HC LIBRARY\GLB - 4/20/20 11:12 - L:\NOTEBOOKS\1944901\_601\_DEXTER\_AVE\_NORTH\_DESIGN\_STUDY\FIELD DATA\PERM\_GINT FILES\1944900-BL-APR-2019-REV.GPJ - danielknapp



General Notes:  
 1. Refer to Figure C-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 approximate.

Date Started: 4/4/19 Date Completed: 4/4/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier/N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624853 Long: -122.342859 (WGS 84) Rig Model/Type: Truck-mounted drill rig  
 Ground Surface Elevation: 31.5 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: This boring was originally completed for the Phase II Environmental Assessment dated May 23, 2019. Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): NA  
 Hole Diameter: 6 inches Casing Diameter: NA  
 Total Depth: 31.5 feet Depth to Groundwater: Not Identified

HC BORING LOG - F:\GINT\HC LIBRARY\GLB - 4/20/20 11:12 - L:\NOTEBOOKS\1944901 601 DEXTER AVE NORTH DESIGN STUDY\FIELD DATA\PERM\_GINT FILES\1944900-BL-APR-2019-REV.GPJ - danielknapp



- General Notes:
1. Refer to Figure C-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 approximate.

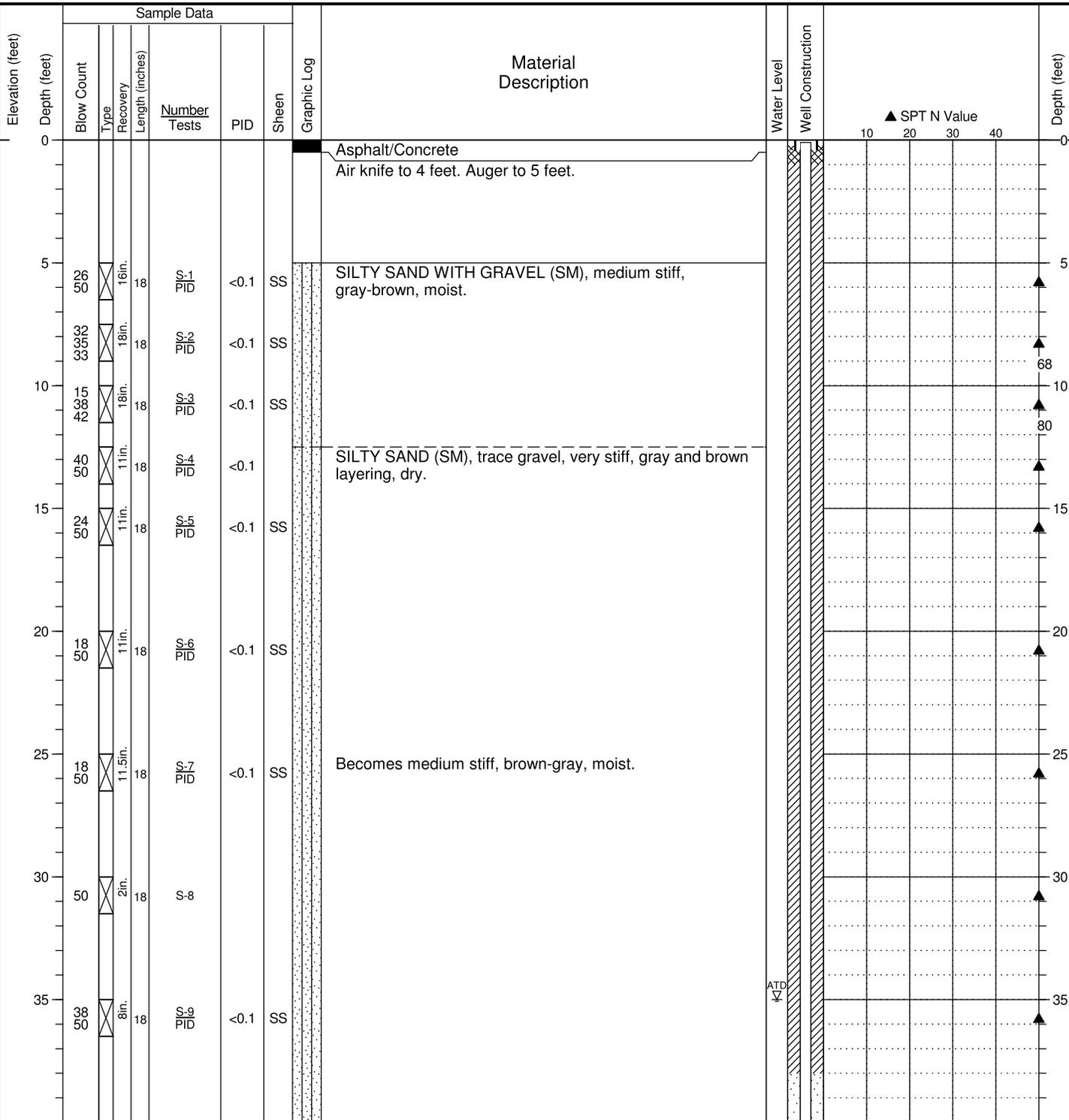


Project: 601 Dexter Avenue North Design Study  
 Location: Seattle, WA  
 Project No.: 19449-00

Boring Log  
**HC-3**

Figure **C-4**  
 Sheet **1 of 1**

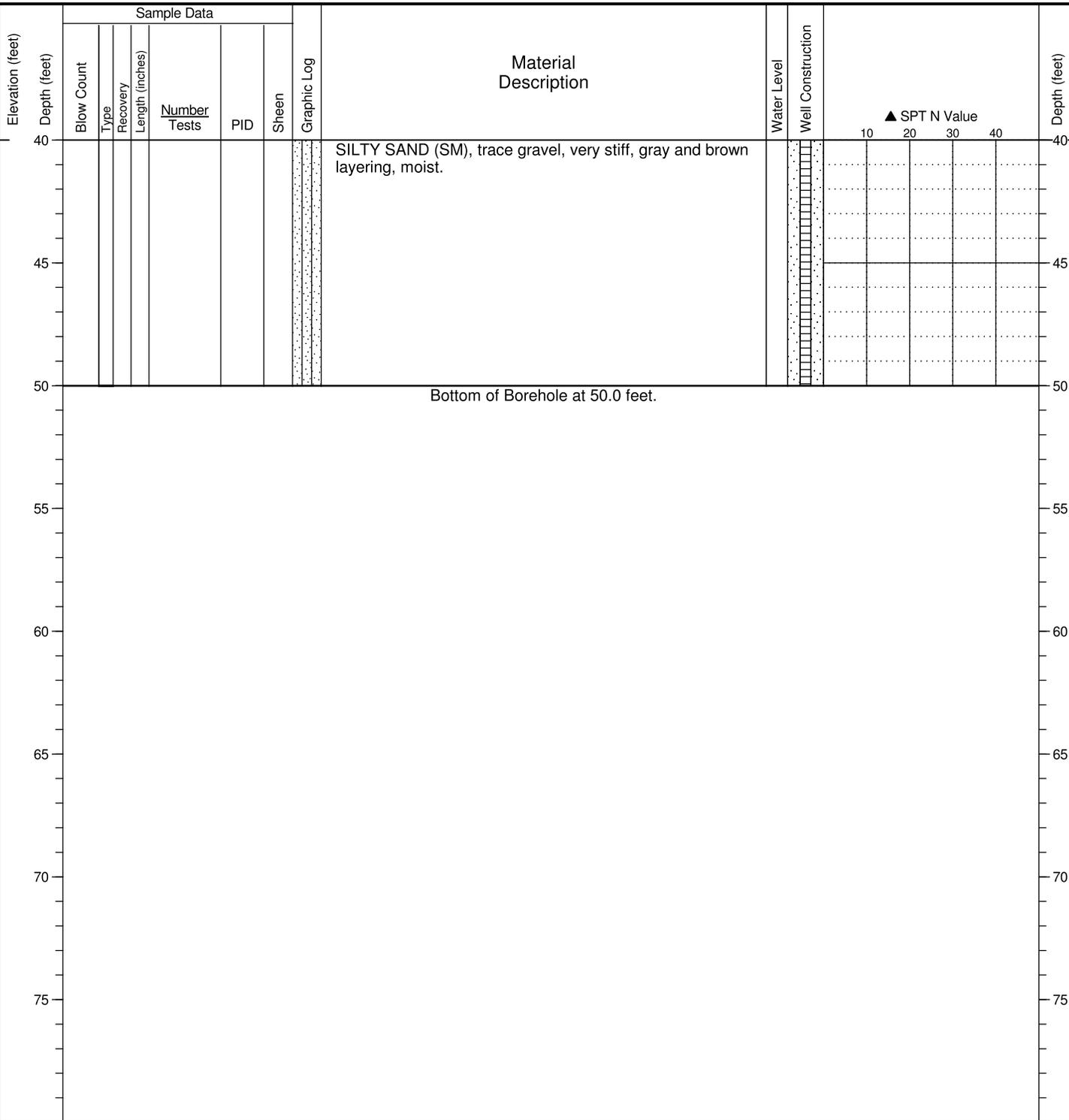
Date Started: 4/4/19 Date Completed: 4/4/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier Drilling Method: Hollow Stem Auger  
 Location: Rig Model/Type:  
 Ground Surface Elevation: Hammer Type: Auto-hammer  
 Horizontal Datum: Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Vertical Datum: Measured Hammer Efficiency (%): NA  
 Comments: Well Tag ID: BLR-695 Location and ground surface elevations are approximate. Hole Diameter: 4.25 inches Casing Diameter:  
 Total Depth: 50 feet Depth to Groundwater: 35 feet



General Notes:  
 1. Refer to Figure A-1 for explanation of descriptions and symbols.  
 2. Material descriptions and stratum lines are interpretive and actual changes may be gradual. Solid stratum lines indicate distinct contact between material strata or geologic units. Dashed stratum lines indicate gradual or approximate change between material strata or geologic units.  
 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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Date Started: 4/4/19 Date Completed: 4/4/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier Drilling Method: Hollow Stem Auger  
 Location: Rig Model/Type: \_\_\_\_\_  
 Ground Surface Elevation: Hammer Type: Auto-hammer  
 Horizontal Datum: Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Vertical Datum: Measured Hammer Efficiency (%): NA  
 Comments: Well Tag ID: BLR-695 Location and ground surface elevations are approximate. Hole Diameter: 4.25 inches Casing Diameter: \_\_\_\_\_  
 Total Depth: 50 feet Depth to Groundwater: 35 feet



HC BORING LOG - J:\GINT\HC LIBRARY.GLB - 5/10/19 13:50 - L:\NOTEBOOKS\1944900\_601\_DEXTER.DUE\_DILEGENCE\FIELD DATA\PERM\_GINT FILES\1944900-BL.GPJ - kzi

General Notes:

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material descriptions and stratum lines are interpretive and actual changes may be gradual. Solid stratum lines indicate distinct contact between material strata or geologic units. Dashed stratum lines indicate gradual or approximate change between material strata or geologic units.
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.

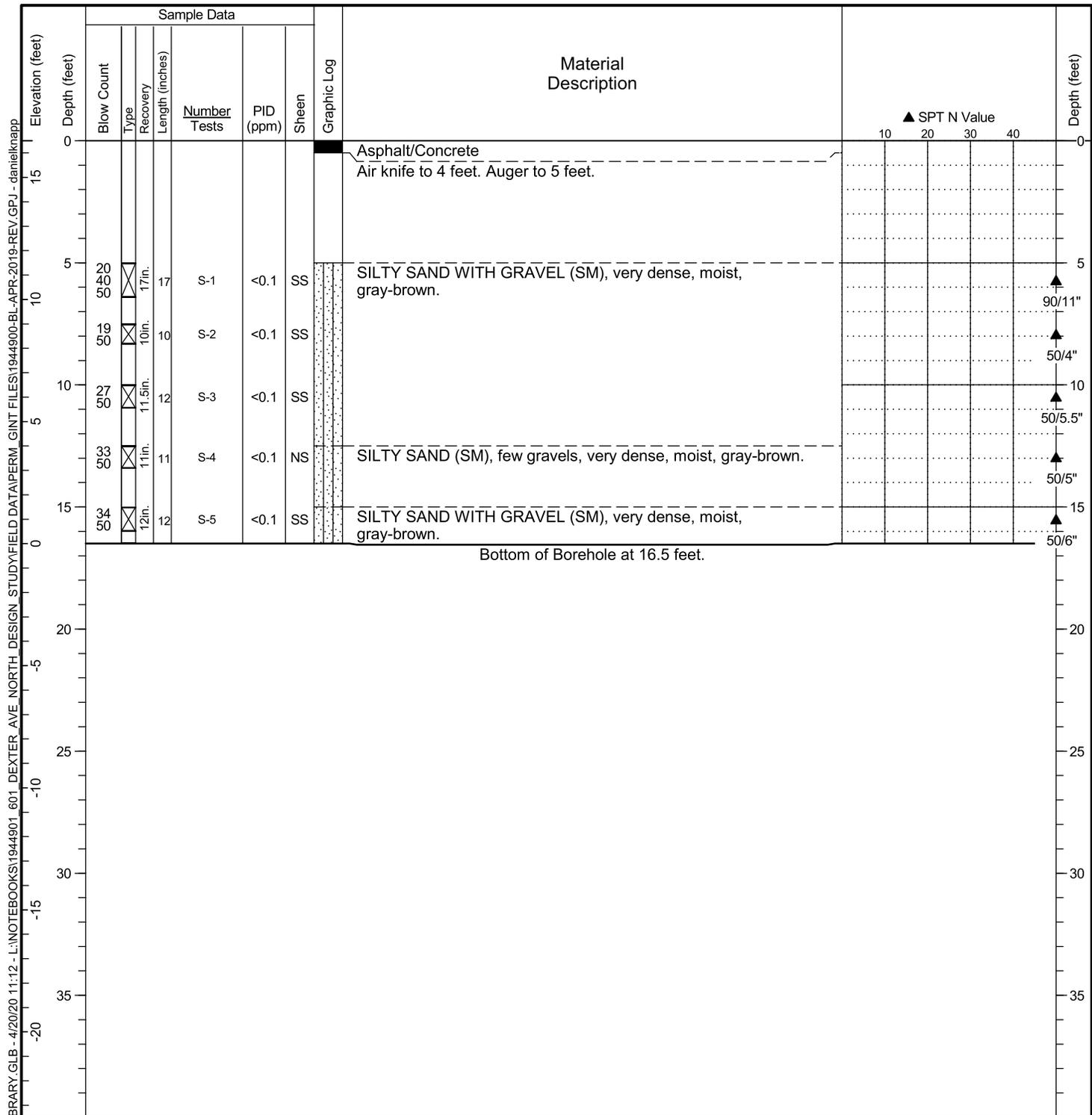


Project: 601 Dexter  
 Location: Seattle, WA  
 Project No.: 19449-00

Boring Log  
**HC-4**

Figure **A-5**  
 Sheet **2 of 2**

Date Started: 4/3/19 Date Completed: 4/3/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier/N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624930 Long: -122.342655 (WGS 84) Rig Model/Type: Truck-mounted drill rig  
 Ground Surface Elevation: 16.5 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: This boring was originally completed for the Phase II Environmental Assessment dated May 23, 2019. Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): NA  
 Hole Diameter: 6 inches Casing Diameter: NA  
 Total Depth: 16.5 feet Depth to Groundwater: Not Identified



General Notes:

1. Refer to Figure C-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 approximate.

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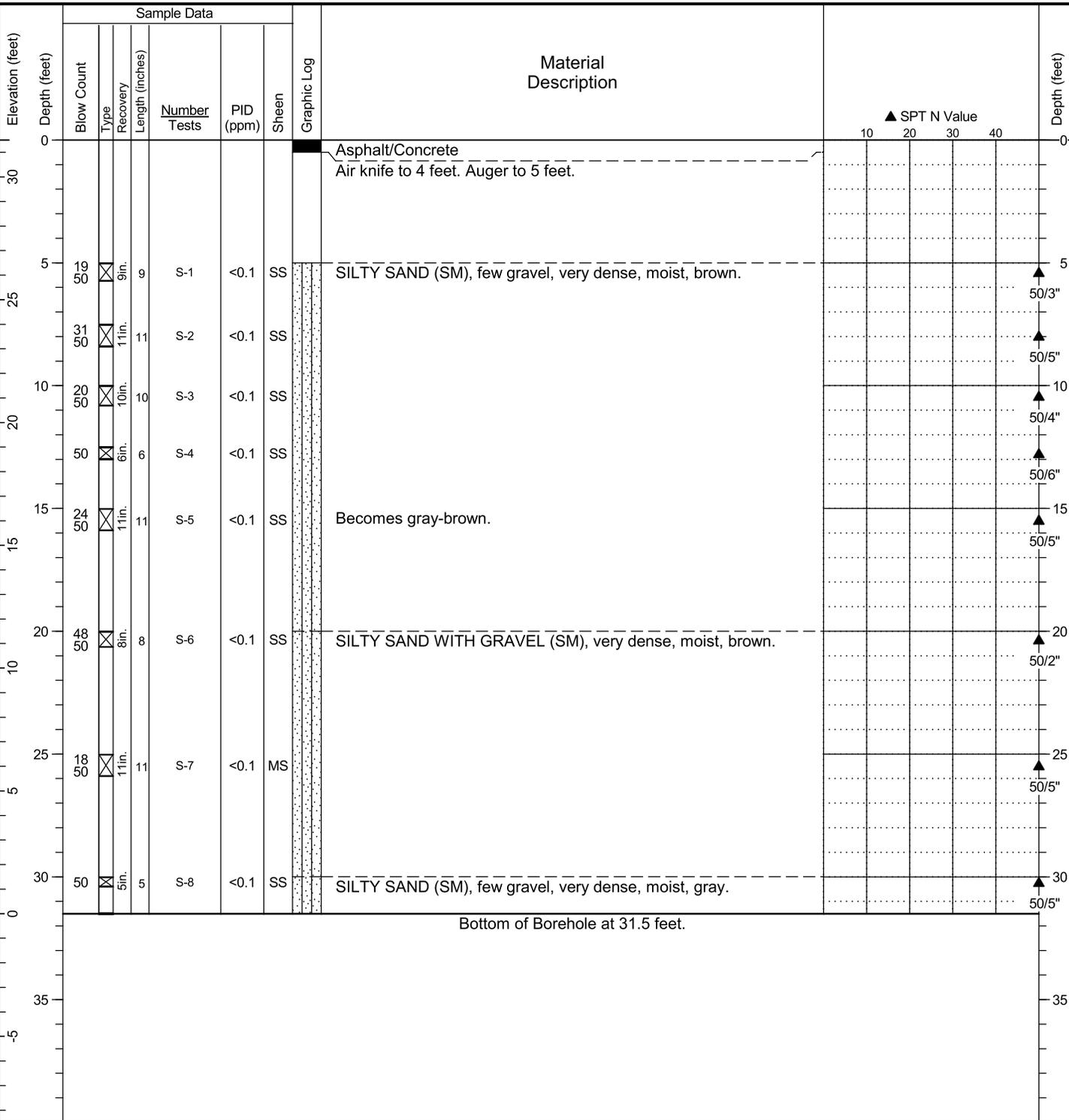
Project: 601 Dexter Avenue North Design Study  
 Location: Seattle, WA  
 Project No.: 19449-00

Boring Log  
**HC-5**

Figure **C-6**  
 Sheet **1 of 1**

Date Started: 4/4/19 Date Completed: 4/4/19 Drilling Contractor/Crew: Holt Services, Inc. / Rayon  
 Logged by: M. Fong Checked by: B. Dozier/N. Jones Drilling Method: Hollow Stem Auger  
 Location: Lat: 47.624902 Long: -122.342746 (WGS 84) Rig Model/Type: Truck-mounted drill rig  
 Ground Surface Elevation: 31.5 feet (NAVD 88) Hammer Type: Auto-hammer  
 Comments: This boring was originally completed for the Phase II Environmental Assessment dated May 23, 2019. Hammer Weight (pounds): 140 Hammer Drop Height (inches): 30  
 Measured Hammer Efficiency (%): NA  
 Hole Diameter: 6 inches Casing Diameter: NA  
 Total Depth: 31.5 feet Depth to Groundwater: Not Identified

HC BORING LOG - F:\GINT\HC LIBRARY\GLB - 4/20/20 11:12 - L:\NOTEBOOKS\1944901 601 DEXTER AVE NORTH DESIGN STUDY\FIELD DATA\PERM\_GINT FILES\1944900-BL-APR-2019-REV.GPJ - daniekknapp



General Notes:

1. Refer to Figure C-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 approximate.



Project: 601 Dexter Avenue North Design Study  
 Location: Seattle, WA  
 Project No.: 19449-00

Boring Log  
**MW-1**

Figure **C-7**  
 Sheet **1 of 1**



**Project:** 700 Dexter  
**Project Number:** 0797-001  
**Logged by:** RAH  
**Date Started:** 02/04/13  
**Surface Conditions:** Asphalt  
**Well Location N/S:** 96' south of power pole at SE corner of the intersection of Roy and Dexter  
**Well Location E/W:** 12.6' west of power pole at SE corner of the intersection of Roy and Dexter  
**Reviewed by:** CCC  
**Date Completed:** 02/04/13

**BORING LOG** | **B117**  
 MW117

**Site Address:** 700 Dexter Avenue North  
 Seattle, WA

**Water Depth At Time of Drilling** 40 feet bgs  
**Water Depth After Completion** feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
0								<p>Asphalt 6" thick.</p> <p>Boring cleared with a vector truck to a depth of 8' below ground surface (bgs).</p>	
10	50/4"	10	0.0	B117-10	SM		<p>Damp, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (30-55-15).</p>		

**Drilling Co./Driller:** Cascade Drilling Co./Curtis  
**Drilling Equipment:** HSA LAR  
**Sampler Type:** Split-spoon  
**Hammer Type/Weight:** 140 lbs  
**Total Boring Depth:** 55.5 feet bgs  
**Total Well Depth:** 55 feet bgs  
**State Well ID No.:** BHS 885

**Well/Auger Diameter:** 2/8.25 inches  
**Well Screened Interval:** 40 to 55 feet bgs  
**Screen Slot Size:** 0.010 inches  
**Filter Pack Used:** #2/12 Sand  
**Surface Seal:** Concrete  
**Annular Seal:** Bentonite Chips  
**Monument Type:** Flush mount

**Notes/Comments:**



**Project:** 700 Dexter  
**Project Number:** 0797-001  
**Logged by:** RAH  
**Date Started:** 02/04/13  
**Surface Conditions:** Asphalt  
**Well Location N/S:** 96' south of power pole at SE corner of the intersection of Roy and Dexter  
**Well Location E/W:** 12.6' west of power pole at SE corner of the intersection of Roy and Dexter  
**Reviewed by:** CCC  
**Date Completed:** 02/04/13

**BORING LOG** | **B117**  
 MW117

**Site Address:** 700 Dexter Avenue North  
 Seattle, WA

**Water Depth At Time of Drilling** 40 feet bgs  
**Water Depth After Completion** feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
15	50/5"	33	0.0	B117-15	SM		Moist, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-65-10).		
20	50/5"	33	0.0	B117-20	SP-SM		Damp, very dense, medium to fine SAND with silt and gravel, light brown, no solvent or hydrocarbon odor (15-75-10).		
25	50/5"	30	0.0	B117-25	SM		Damp, very dense, silty SAND with gravel, cohesive, light brown, no solvent or hydrocarbon odor (40-50-10).		
30									

**Drilling Co./Driller:** Cascade Drilling Co./Curtis  
**Drilling Equipment:** HSA LAR  
**Sampler Type:** Split-spoon  
**Hammer Type/Weight:** 140 lbs  
**Total Boring Depth:** 55.5 feet bgs  
**Total Well Depth:** 55 feet bgs  
**State Well ID No.:** BHS 885

**Well/Auger Diameter:** 2/8.25 inches  
**Well Screened Interval:** 40 to 55 feet bgs  
**Screen Slot Size:** 0.010 inches  
**Filter Pack Used:** #2/12 Sand  
**Surface Seal:** Concrete  
**Annular Seal:** Bentonite Chips  
**Monument Type:** Flush mount

**Notes/Comments:**



**Project:** 700 Dexter  
**Project Number:** 0797-001  
**Logged by:** RAH  
**Date Started:** 02/04/13  
**Surface Conditions:** Asphalt  
**Well Location N/S:** 96' south of power pole at SE corner of the intersection of Roy and Dexter  
**Well Location E/W:** 12.6' west of power pole at SE corner of the intersection of Roy and Dexter  
**Reviewed by:** CCC  
**Date Completed:** 02/04/13

**BORING LOG** | **B117**  
 MW117

**Site Address:** 700 Dexter Avenue North  
 Seattle, WA

**Water Depth At Time of Drilling** 40 feet bgs  
**Water Depth After Completion** feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
30	50/5"	30	0.0	B117-30	SM		Wet, very dense, silty SAND with gravel, light brown, no solvent or hydrocarbon odor (25-60-15).		
35	50/5"	30	0.0	B117-35	SM		Moist, very dense, silty SAND with gravel, gray, no solvent or hydrocarbon odor (30-60-10).		
40	50/6"	100	0.0	B117-40	SP-SM		Wet, very dense, medium to fine SAND with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).		
45									

**Drilling Co./Driller:** Cascade Drilling Co./Curtis  
**Drilling Equipment:** HSA LAR  
**Sampler Type:** Split-spoon  
**Hammer Type/Weight:** 140 lbs  
**Total Boring Depth:** 55.5 feet bgs  
**Total Well Depth:** 55 feet bgs  
**State Well ID No.:** BHS 885

**Well/Auger Diameter:** 2/8.25 inches  
**Well Screened Interval:** 40 to 55 feet bgs  
**Screen Slot Size:** 0.010 inches  
**Filter Pack Used:** #2/12 Sand  
**Surface Seal:** Concrete  
**Annular Seal:** Bentonite Chips  
**Monument Type:** Flush mount

**Notes/Comments:**



**Project:** 700 Dexter  
**Project Number:** 0797-001  
**Logged by:** RAH  
**Date Started:** 02/04/13  
**Surface Conditions:** Asphalt  
**Well Location N/S:** 96' south of power pole at SE corner of the intersection of Roy and Dexter  
**Well Location E/W:** 12.6' west of power pole at SE corner of the intersection of Roy and Dexter  
**Reviewed by:** CCC  
**Date Completed:** 02/04/13

**BORING LOG** | **B117**  
 MW117

**Site Address:** 700 Dexter Avenue North  
 Seattle, WA

**Water Depth At Time of Drilling** 40 feet bgs  
**Water Depth After Completion** feet bgs

Depth (feet bgs)	Interval	Blow Count	% Recovery	PID (ppmv)	Sample ID	USCS Class	Graphic	Lithologic Description	Well Construction Detail
45	50/6"	100	0.0	B117-45	SP-SM		Wet, very dense, medium to fine sand with silt and gravel, gray, no solvent or hydrocarbon odor (10-80-10).		
50	50/5"	30	0.0	B117-50	SM-ML		Moist, very dense, silty SAND with gravel, cohesive, gray, no solvent or hydrocarbon odor (45-45-10).		
55	50/5"	20	0.0	B117-55	SM ML		Damp, very dense, silty SAND, gray, no solvent or hydrocarbon odor (20-80-0). Damp, very dense, SILT with fine sand, no solvent or hydrocarbon odor (55-45-0).		
60							Boring terminated at 55.5 feet below ground surface. A two-inch diameter well was installed to a depth of 55 feet bgs, screened from 40 to 55 feet bgs, and finished with a flush-mounted monument and concrete seal. Completed as monitoring well MW117.		

**Drilling Co./Driller:** Cascade Drilling Co./Curtis  
**Drilling Equipment:** HSA LAR  
**Sampler Type:** Split-spoon  
**Hammer Type/Weight:** 140 lbs  
**Total Boring Depth:** 55.5 feet bgs  
**Total Well Depth:** 55 feet bgs  
**State Well ID No.:** BHS 885

**Well/Auger Diameter:** 2/8.25 inches  
**Well Screened Interval:** 40 to 55 feet bgs  
**Screen Slot Size:** 0.010 inches  
**Filter Pack Used:** #2/12 Sand  
**Surface Seal:** Concrete  
**Annular Seal:** Bentonite Chips  
**Monument Type:** Flush mount

**Notes/Comments:**





Well Completion	PID (PPM)	Sample ID	Sample Recovery (in)	Sample Interval	Depth (Feet)	Graphic Log	Lithologic Description
<p>Concrete</p> <p>Bentonite Chips</p> <p>Sch. 40 PVC Casing</p>					0		Concrete (7-inches)
					2		BROWN SILTY SAND WITH GRAVEL (SM), moist, fine to coarse, some fines, little fine to coarse subangular to rounded gravel (FILL)
	0.0				4		Air knife & vac to 5 feet
	0.0		24	4-6	6		at 5 feet: fine to medium, fine gravel, consolidated
	0.0				8		
	0.0		36	6-8	8		
	0.0				10		
	0.0				12		
	0.0				14		BROWN SILTY SAND WITH GRAVEL (SM), moist, fine to coarse, some fines, little fine to coarse subangular to subrounded gravel, appears looser and less consolidated than above
	0.0		120	12-14	14		at 16 feet: little fines
	0.0				16		
	0.0				18		
	0.0				20		BROWN SANDY SILT WITH GRAVEL (ML), moist, some fine to coarse sand, little fine to coarse subangular to subrounded gravel, consolidated, sample warm to touch
	0.0				22		
	0.0		120	20-22	24		BROWN SILTY SAND (SM), moist, fine to coarse, some fines, few fine to coarse subangular to subrounded gravel, consolidated, sand fining with depth
	0.0				26		from 26 to 28.5 feet: gray mottling
	0.0				28		at 28.5 feet: color transitions to gray
	0.0				30		GRAY SANDY SILT (ML), moist, some fine to coarse sand, few fine to coarse subangular to rounded gravel, consolidated, sample warm to touch
	0.0				32		GRAY SILTY SAND (SM), moist, fine to medium sand, some fines, few fine to coarse subangular to rounded gravel, consolidated
	0.0		120	30-32	34		GRAY SANDY SILT (ML), moist, some fine to coarse sand, few fine to coarse subangular to subrounded gravel, consolidated, occasional sand lenses (2mm thick), grading finer with depth
0.0				36			
0.0				38			
0.0				40			

Project: Former American Linen Supply  
 Project Number: 1413.001.02.501B  
 Site Location: Seattle, WA  
 Logged By: R. McLaughlin  
 Ecology Well Tag: BMF-577

Total Drilled Depth: 55 feet  
 Diameter of Boring: 6.25 inches  
 Drill Date: 9/30/2019  
 Drilled By: Holt Services  
 Drill Method: Sonic



Well Completion	PID (PPM)	Sample ID	Sample Recovery (in)	Sample Interval	Depth (Feet)	Graphic Log	Lithologic Description
	0.0		60		42		GRAY SILTY SAND (SM), wet, fine to medium, some fines, appears loose
	0.0				44		GRAY SILTY SAND (SM), wet, fine to medium, little fines, cohesionless
	0.0				46		GRAY SANDY SILT (ML), moist, little fine to medium sand, few subangular to rounded gravel, consolidated
	0.1		120		48		GRAY SILT (ML), moist, few fine sand, less consolidated than above
	0.0				50		at 50 feet: little fine to coarse subangular to subrounded gravel, very hard
	0.0				52		
	0.0				54		
	0.1				55		
	0.0					56	Bottom of Boring at 55 feet
	0.0					58	Well Completion Details: Well constructed with 2-inch Schedule 40 PVC pipe and a 0.020-inch machine slotted screen with #12-20 Sand
	0.0					60	Total Well Depth: 52.9 feet Well Sump/Endcap: 52.8 to 52.9 feet Well Screen: 42.8 to 52.8 feet Well Riser: 0.3 to 42.8 feet Filter Pack: 41 to 55 feet Well Seal: 2 to 41 feet (hydrated bentonite chips) Surface Seal: 0 to 2 feet (concrete) Well Monument: Flush with grade 8-inch steel monument
	0.0					62	
	0.0					64	
	0.0					66	
	0.0					68	
0.0					70		
0.0					72		
0.0					74		
0.0					76		
0.0					78		
0.0					80		

Project: Former American Linen Supply  
 Project Number: 1413.001.02.501B  
 Site Location: Seattle, WA  
 Logged By: R. McLaughlin  
 Ecology Well Tag: BMF-577

Total Drilled Depth: 55 feet  
 Diameter of Boring: 6.25 inches  
 Drill Date: 9/30/2019  
 Drilled By: Holt Services  
 Drill Method: Sonic



Well Completion	PID (PPM)	Sample ID	Sample Recovery (in)	Sample Interval	Depth (Feet)	Graphic Log	Lithologic Description
<p>Concrete</p> <p>Bentonite Chips</p> <p>Sch. 40 PVC Casing</p>					0		Concrete
					2		BROWN SILTY SAND WITH GRAVEL (SM), moist, fine to coarse, some fines, little fine to coarse subangular to subrounded gravel (FILL)
	0.0				4		
	0.0	MW-307-6			6		Air knife & vac to 5 feet
	0.0				8		
	0.6			120		8	
	0.0					10	
	0.0	MW-307-10				10	
	0.0					12	
	0.0					14	
	0.0	MW-307-15				14	
	0.0					16	
	0.0					18	
	0.0	MW-307-20				20	
	0.0					22	
	0.0					24	
	0.1					26	
	1.0	MW-307-25				26	
	0.0					28	
	0.0					30	
0.0	MW-307-30				30		
0.0					32		
0.0					34		
0.0	MW-307-35				34		
0.0					36		
0.0					38		
0.0					40		
0.0	MW-307-40				40		at 40 feet: little fines, trace gravel

Project: Former American Linen Supply  
 Project Number: 1413.001.02.501B  
 Site Location: Seattle, WA  
 Logged By: R. McLaughlin  
 Notes: BMF-580

Total Drilled Depth: 85 feet  
 Diameter of Boring: 6 inches  
 Drill Date: 10/3/19  
 Drilled By: Holt Services  
 Drill Method: Sonic

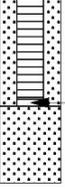
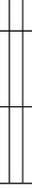


Well Completion	PID (PPM)	Sample ID	Sample Recovery (in)	Sample Interval	Depth (Feet)	Graphic Log	Lithologic Description
	0.0	MW-307-45	120		42		GRAY SILT WITH SAND (ML), moist, little fine to medium sand, occasional sand lenses (2 mm), appears consolidated
	0.0				44		GRAY SILTY SAND (SM), moist, fine to coarse, little fines, trace gravel, appears loose at 43 feet: sample collected for physical analysis
	0.0				46		GRAY SILTY SAND WITH GRAVEL (SM), moist, fine to coarse, some fines, little fine to coarse subangular to rounded gravel, appears hard
	0.0				48		GRAY SANDY SILT (ML), moist, some fine to coarse sand, few fine to coarse subangular to subrounded gravel, appears hard
	0.0	MW-307-50	120		50		at 52 feet: little gravel
	0.0				54		at 56 feet: few gravel, fine to medium sand, material softens
	0.0	MW-307-55	120		56		at 56 feet: few gravel, fine to medium sand, material softens
	0.0				58		
	0.0	MW-307-60	120		60		
	0.0				62		
	0.0	MW-307-65	120		64		GRAY SANDY SILT (ML), moist, some fine to coarse sand, few fine angular to subrounded gravel, appears very hard
	0.0				66		
	0.0	MW-307-70	120		68		GRAY SILT WITH SAND (ML), little fine to medium sand, few fine subangular to rounded gravel, appears very hard
	0.0				70		GRAY SANDY SILT WITH GRAVEL (ML), moist, some fine to coarse sand, little fine to coarse subangular to rounded gravel, softer than material above
	0.0	MW-307-75	120		72		GRAY SANDY SILT (ML), moist, some fine to medium sand, few fine to coarse subangular to rounded gravel, appears very hard, fines increasing with depth
	0.0				74		
0.0	MW-307-80	120		76			
0.0				78			
0.0	MW-307-80				80		GRAY SILT WITH SAND (ML), moist, little fine to medium sand

Project: Former American Linen Supply  
 Project Number: 1413.001.02.501B  
 Site Location: Seattle, WA  
 Logged By: R. McLaughlin  
 Notes: BMF-580

Total Drilled Depth: 85 feet  
 Diameter of Boring: 6 inches  
 Drill Date: 10/3/19  
 Drilled By: Holt Services  
 Drill Method: Sonic



Well Completion	PID (PPM)	Sample ID	Sample Recovery (in)	Sample Interval	Depth (Feet)	Graphic Log	Lithologic Description
	0.0	MW-307-85	60		82		GRAY SANDY SILT (ML), moist, fine to medium, few fine to coarse subangular to subrounded gravel
	0.0				84		GRAY SILT WITH SAND (ML), moist, fine to medium, few fine to coarse subangular to rounded gravel
	0.0				86		Bottom of Boring at 85 feet
	0.0				88		Well Completion Details: Well constructed with 2-inch Schedule 40 PVC pipe and a 0.020-inch machine slotted screen with #12-20 Sand
	0.0				90		Total Well Depth: 83 feet
					92		Well Sump/Endcap: 82.8 to 83.0 feet Well Screen: 72.8 to 82.8 feet Well Riser: 0.2 to 72.8 feet Filter Pack: 72 to 85 feet Well Seal: 2 to 72 feet (hydrated bentonite chips) Surface Seal: 0 to 2 feet (concrete) Well Monument: Flush with grade 8-inch steel monument
					94		
					96		
					98		
					100		
					102		
					104		
					106		
					108		
					110		
					112		
					114		
					116		
					118		
					120		

Draft

Project: Former American Linen Supply	Total Drilled Depth: 85 feet
Project Number: 1413.001.02.501B	Diameter of Boring: 6 inches
Site Location: Seattle, WA	Drill Date: 10/3/19
Logged By: R. McLaughlin	Drilled By: Holt Services
Notes: BMF-580	Drill Method: Sonic

**APPENDIX A3**  
**Applicable Field Notes and Forms**  
**(2019-2020 Investigation)**

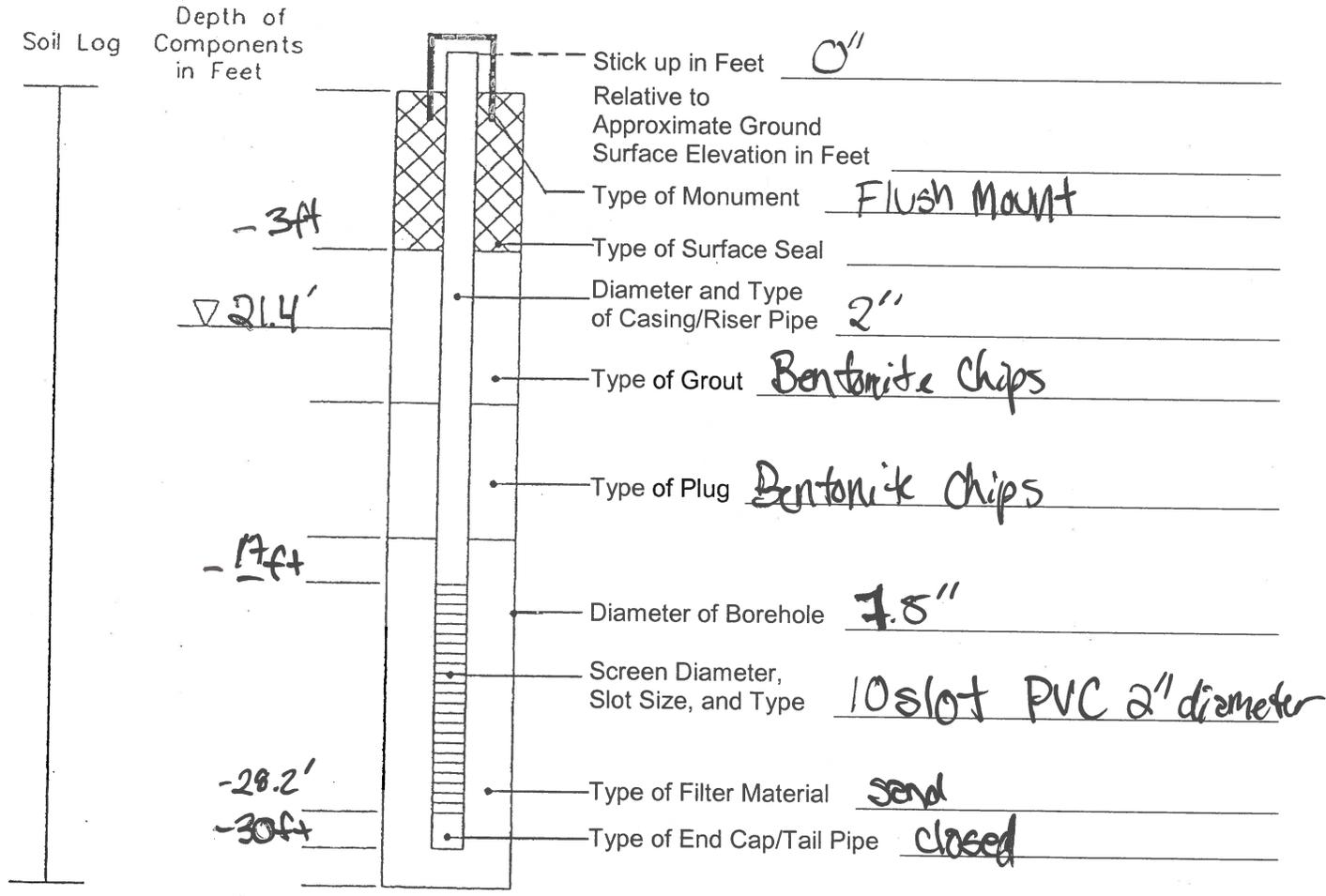
# Installation Report

Well Tag: BLR 921  
 Monitoring Well DMW-19

Project MMB Job No. 1940901 Date 3/5/19

Location Cas Dexter HC Observer C. Krookie Driller Holt

Type of Well (Observation, Sampling, Vapor Extraction) Sampling / Observation



Remarks end cap - 0.2', 10' screen, 10' joints PVC

BLR 921

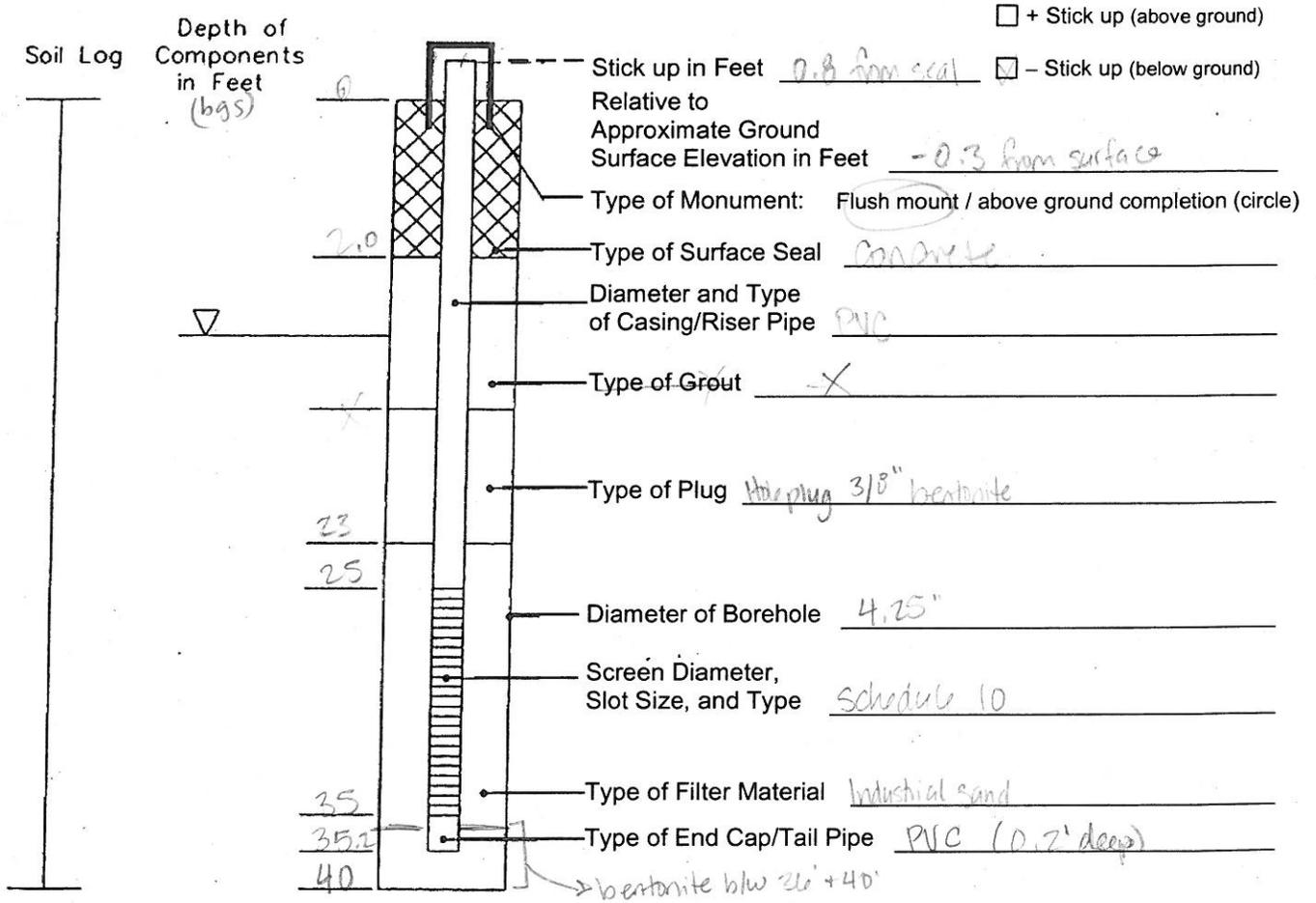
Materials Tally:

Sand	<u>Holt provided</u>	9 bags	Monument	_____
Cement	_____	_____	PVC	<u>holt provided</u>
Bentonite	<u>1" chips</u>	<u>1</u>	Other	_____

# Installation Report

# Monitoring Well DMW-2S

Project Mercer Megablock - Driller Job No. 1940904 Date 3/2/2020  
 Location entrance of manufacturing bldg HC Observer J. Blanchette Driller Holt (Rayon)  
 Type of Well (Observation, Sampling, Vapor Extraction) Sampling  
 Ecology Well Tag No. BME 933



Remarks bentonite between 40-36' bgs, sand between 36-23 bgs, bentonite from 23-2 bgs, cement from 2.0 bgs. flush mount 1.5'

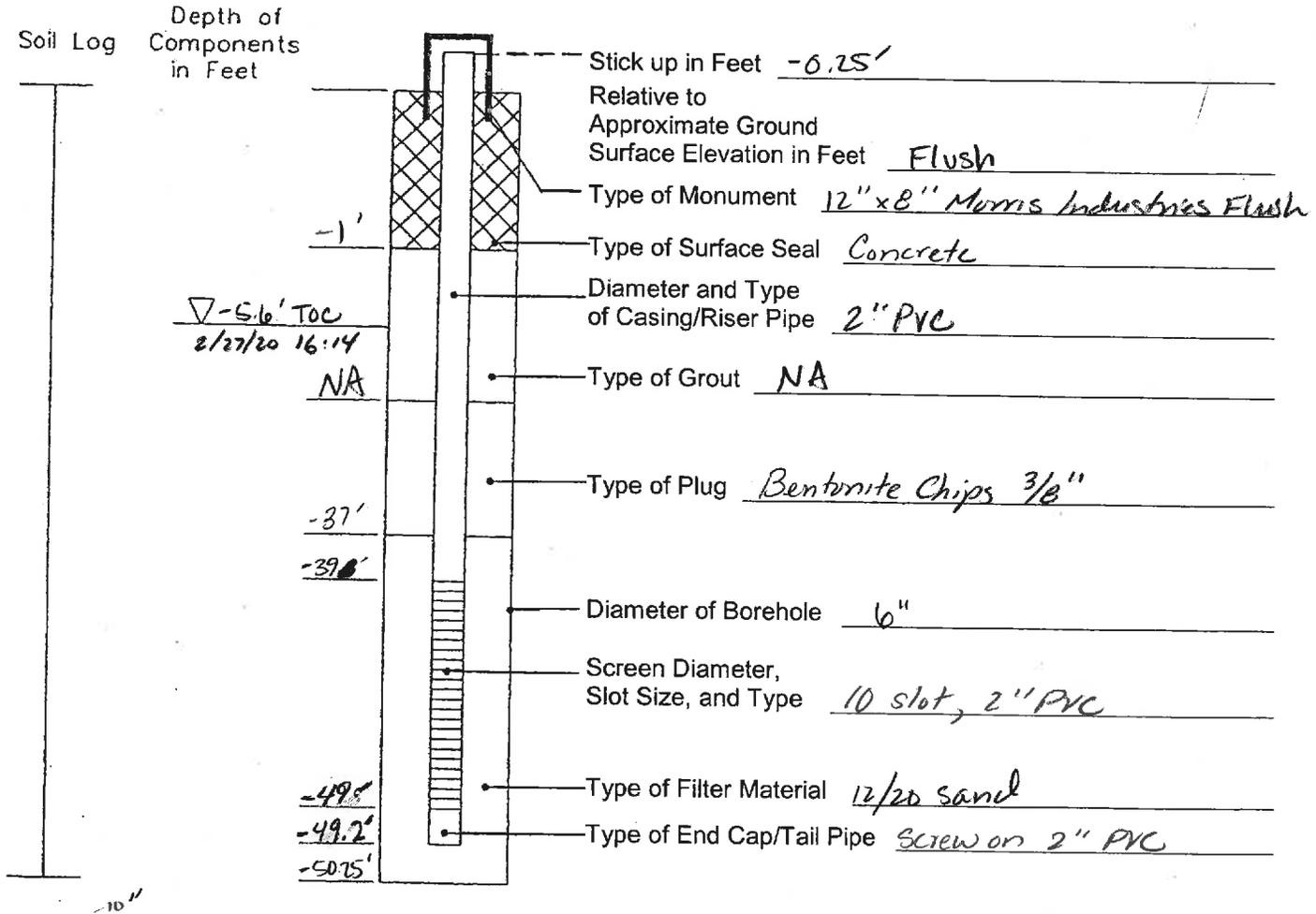
Materials Tally (qty. & unit):

Sand	<u>      50 lb bags</u>	Monument	<u>18" x 1</u>
Cement	<u>2.5 bags</u>	PVC	<u></u>
Bentonite	<u>      bags</u>	Other	<u></u>

# Installation Report

# Monitoring Well DMW-3IA

Project 601/615 Dexter (MMB) Job No. 19449-01 - Geotech Date 2/27/20  
 Location 7' off E wall, 48' off N wall HC Observer C. McCabe Driller Holt-Rayon  
 47.6257897 -122.3426080  
 Type of Well (Observation, Sampling, Vapor Extraction) Observation / Sampling



Remarks Lost 10" due to heaving sands during install so well screen is from -39' -49' instead of planned -46' -50'

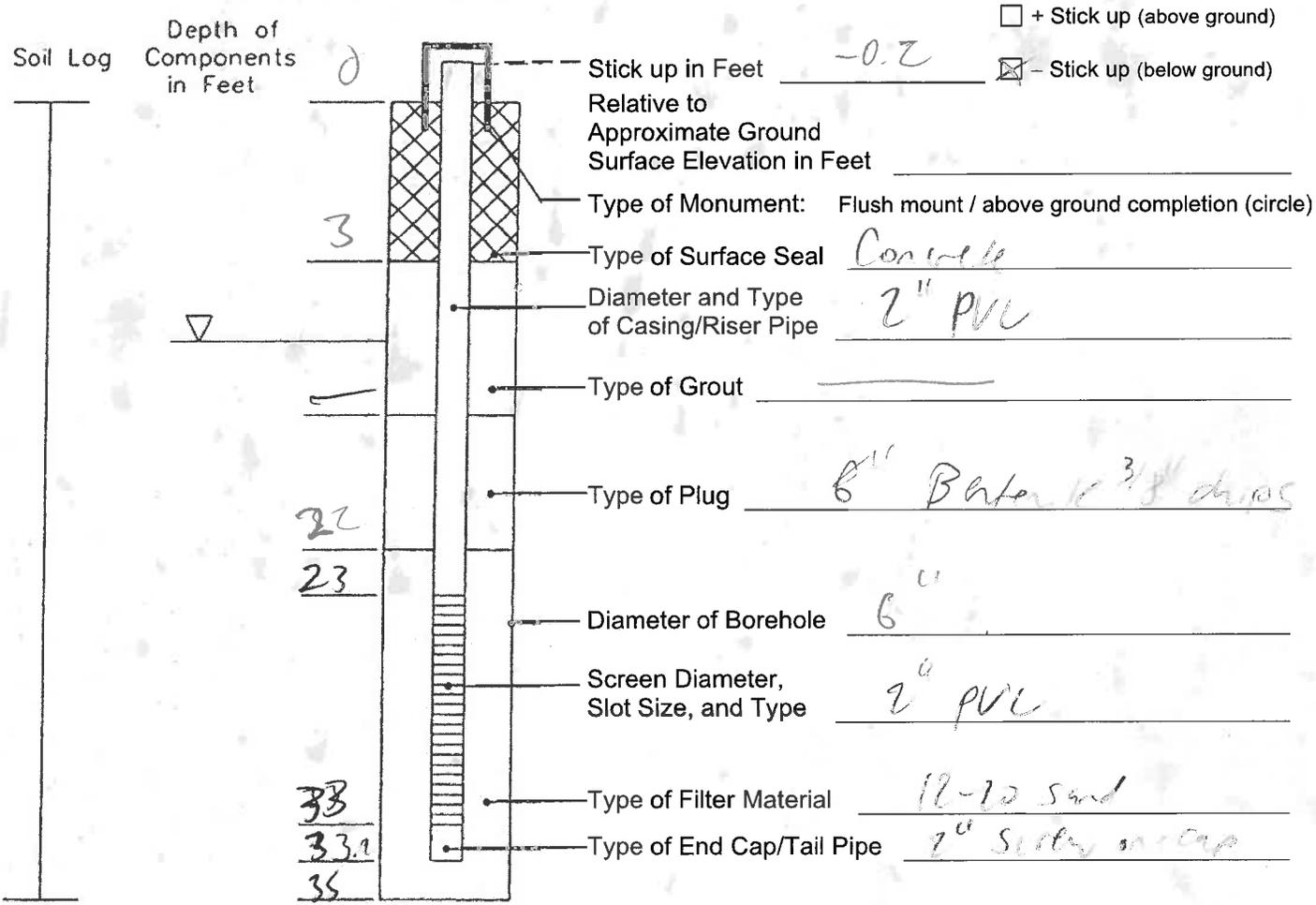
Materials Tally:

Sand	<u>Fillibrand Co Inc x 9</u>	Monument	<u>12" x 8" Morris Industries x 1</u>
Cement	<u>Quikrete</u>	PVC	<u>50' 10' screen 40' PVC 10' sections</u>
Bentonite	<u>Hole Plug 3/8"</u>	Other	<u></u>

# Installation Report

Monitoring Well DMW-45-re-drill

Project 601/615 pester Job No. 194491-6to Date 3/13  
 Location \_\_\_\_\_ HC Observer A. Nakahara Driller Holt, M. J.  
 Type of Well (Observation, Sampling, Vapor Extraction) Observatory, Sampling  
 Ecology Well Tag No. AM BME 999



Remarks redrill, bentonite slurry from 35 to 44 feet was needed to clean out water to place chips, flushed bottom of well with water and used a shopvac to vacuum up excess

Materials Tally (qty. & unit):

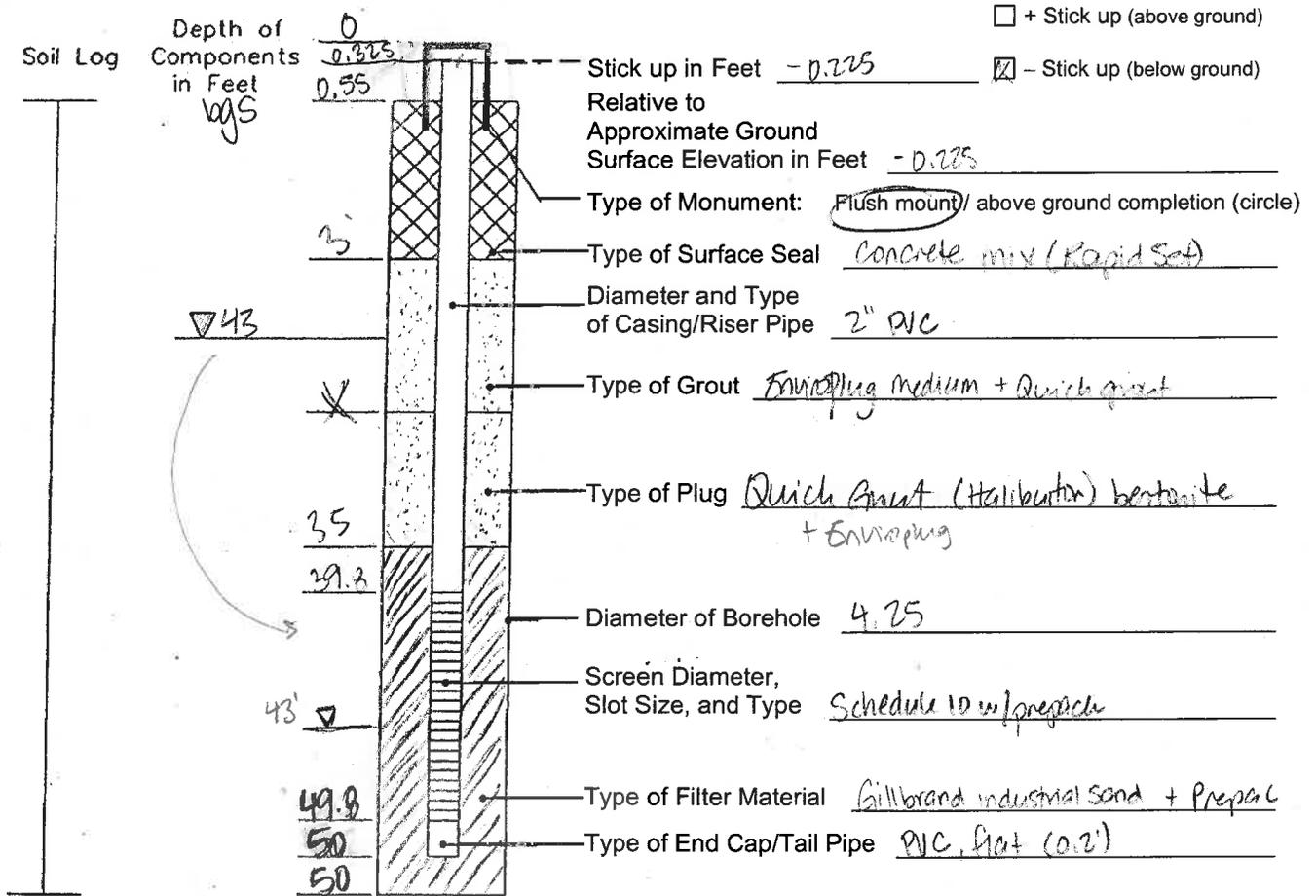
Sand	<u>9 bags Gillibrand Co. Inc. Sully</u>	Monument	<u>water used during flushing stored with decon water</u>
Cement	<u>Quikrete</u>	PVC	<u>33'</u>
Bentonite	<u>Hole Plug 3/8"</u>	Other	

\* 6 ft from N wall of 601 Dexter 23 ft E from SR99 sidewalk  
 10 ft from S wall of 615 Dexter

# Installation Report

# Monitoring Well DMW-SIA

Project Mercer Megablock Job No. 1940904 Date 3/3/20  
 Location 601/615 Dexter in Alley off HC Observer J. Blanchette Driller HDT (Rayon)  
 of Andra (SR99)  
 Type of Well (Observation, Sampling, Vapor Extraction) Sampling  
 Ecology Well Tag No. BME 930



"Findings" = 2/8/20

Remarks Approximate location of water ~43 ft when drilling. Screen set based on findings from drilling / comm blw HC staff Friday + Holt (Core M/Cabr). JPB arrived to see well plugging + sand from Friday was drilled out but likely mixed w/ grout during

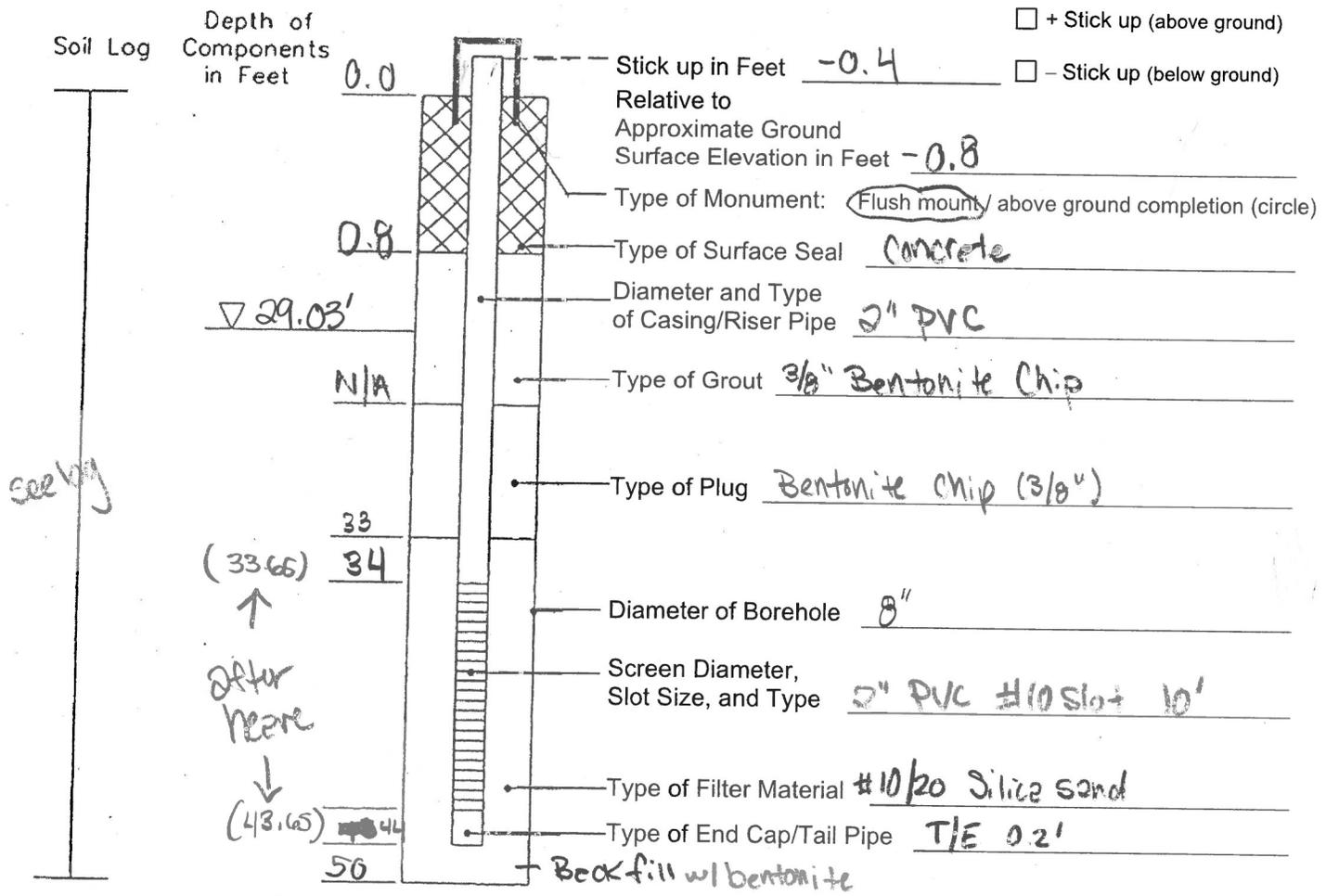
### Materials Tally (qty. & unit):

Sand	11 <sup>(12)</sup> (+ ~8 from Fri) (50lb bag)	Monument	x1 18" flush
Cement	111 <sup>(12)</sup> (50lb bag)	PVC	50' + screen
Bentonite	1111 <sup>(14)</sup> (50lb bag)	Other	

# Installation Report

# Monitoring Well DMW-6

Project 615 Dexter Greentech Job No. 1944901 Date 3/4/20  
 Location Seattle, WA HC Observer C. Kroskie Driller Holt  
 Type of Well (Observation, Sampling, Vapor Extraction) Observation  
 Ecology Well Tag No. BME 934



Remarks Well heaved <sup>(0.35 ft)</sup> 4.2 inches during installation

Materials Tally (qty. & unit):

Sand	_____	Monument	_____
Cement	_____	PVC	_____
Bentonite	_____	Other	_____

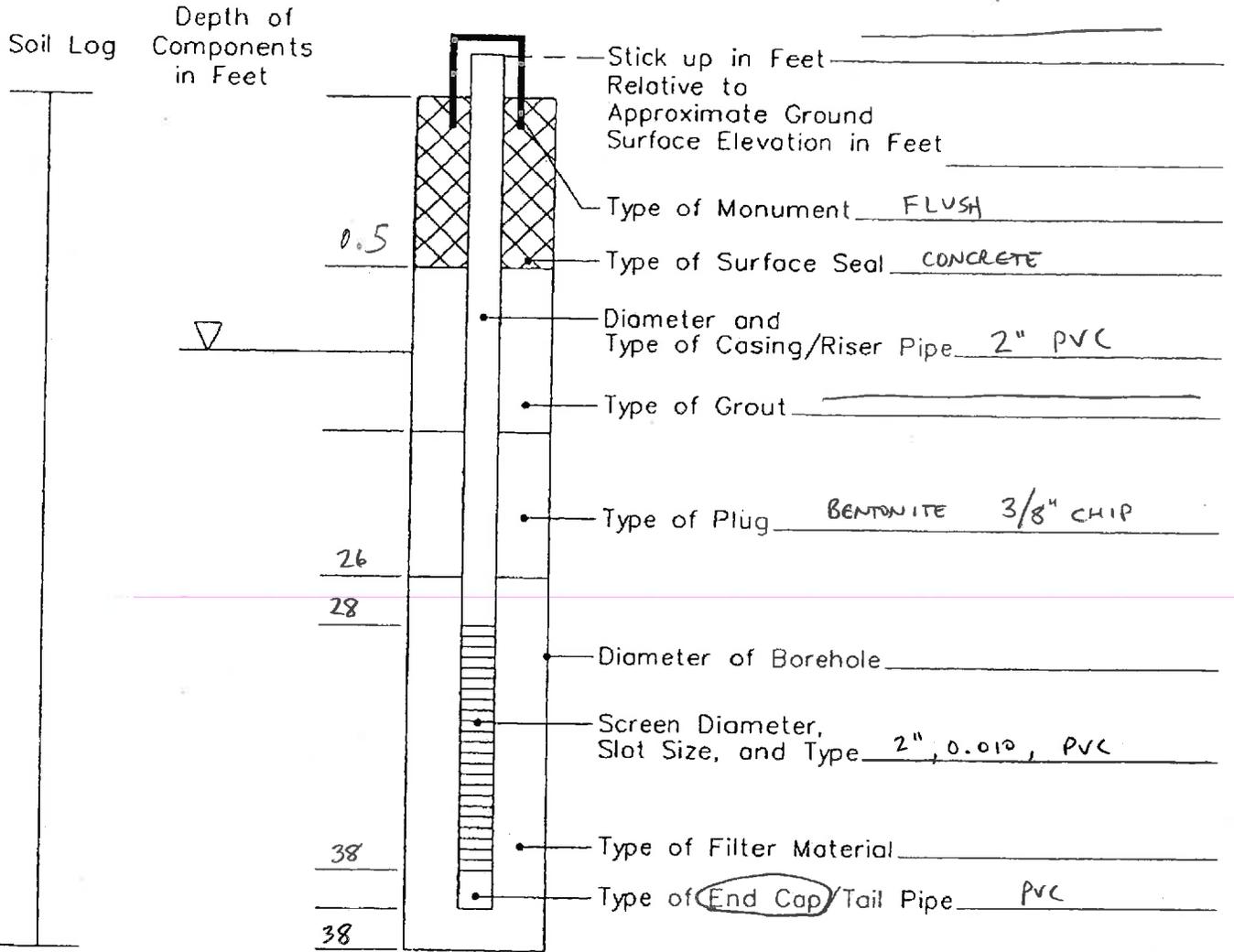
# Installation Report

# Monitoring Well DMW-7S

Project MMB Job No. 1940904 Date 10/26/2020

Location 615 DEXTER AVE SIDEWALK NEAR DEXTER & ROY, SEATTLE HC Observer B LYLE Driller AEC

Type of Well (Observation, Sampling, Vapor Extraction) \_\_\_\_\_



Remarks: ECOLOGY TAG; BLY 430

### Materials Tally:

Sand \_\_\_\_\_ Monument \_\_\_\_\_

Cement \_\_\_\_\_ PVC \_\_\_\_\_

Bentonite \_\_\_\_\_ Other \_\_\_\_\_

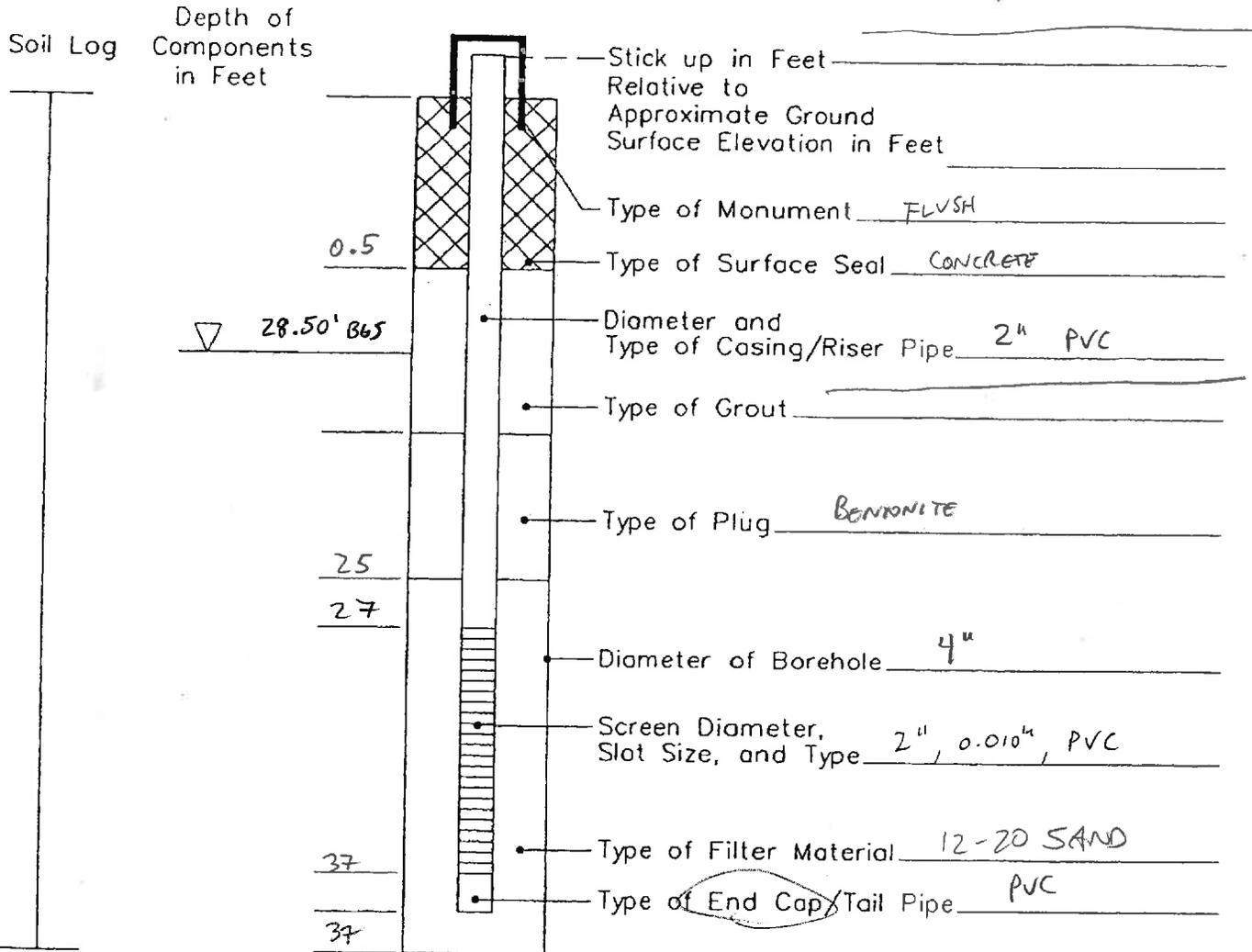
# Installation Report

# Monitoring Well DMW-85

Project MMB Job No. 1940904 Date 10/27/2020

Location SIDEWALK, 615 N. DEKOMA AVE, SEATTLE, WA HC Observer B LITTLE Driller AEC

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION/SAMPLING



Remarks: Ecology TAG; BLY 431

Materials Tally:

Sand \_\_\_\_\_ Monument \_\_\_\_\_

Cement \_\_\_\_\_ PVC \_\_\_\_\_

Bentonite \_\_\_\_\_ Other \_\_\_\_\_

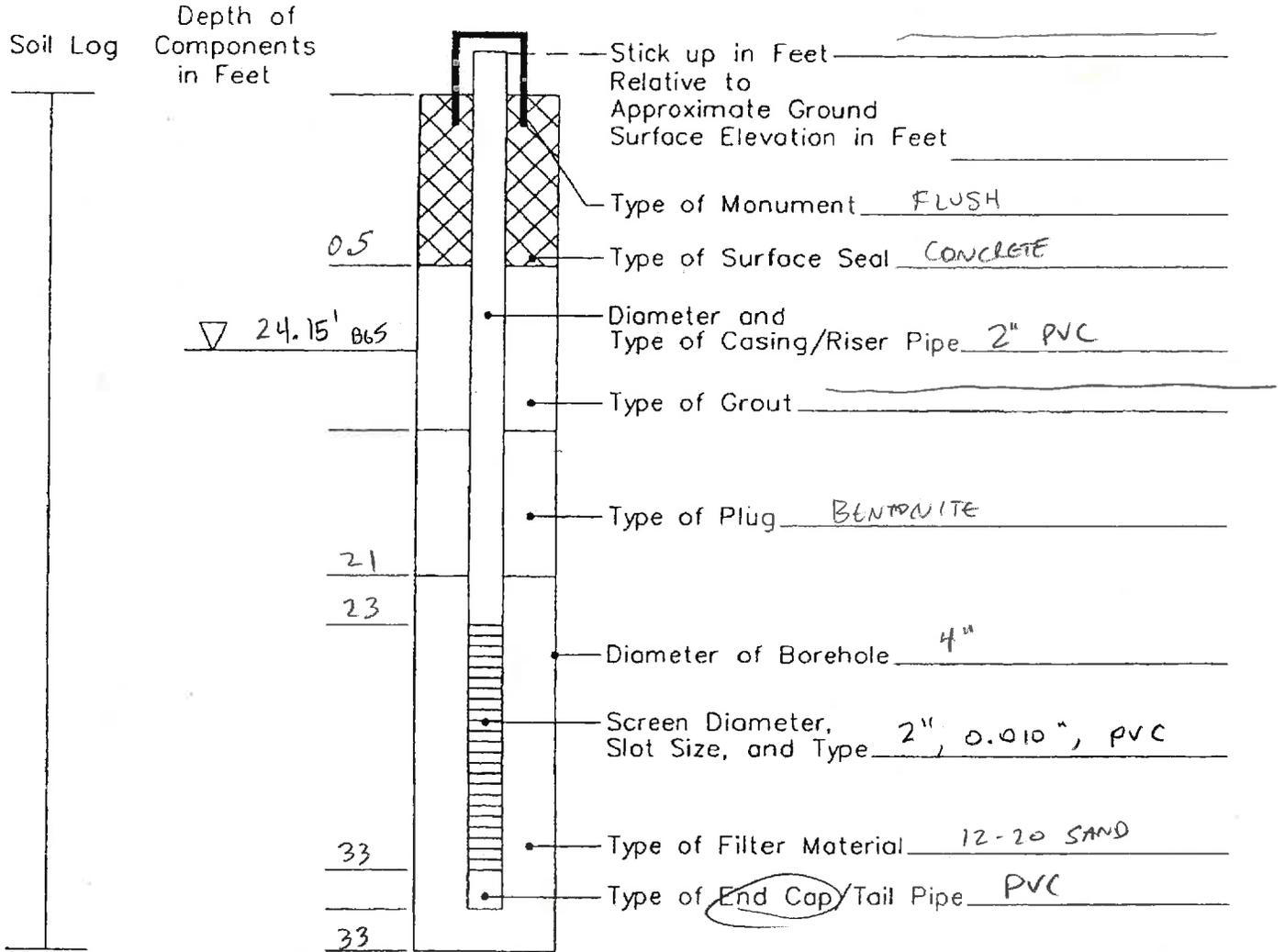
# Installation Report

# Monitoring Well DMW-95

Project MMB Job No. 1940904 Date 10/27/2020

Location 601 DEXTER SIDEWALK, SEATTLE, WA HC Observer B LITTLE Driller AEC

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION/SAMPLING



Remarks: ECOLOGY TAG: BLY 432

### Materials Tally:

Sand \_\_\_\_\_ Monument \_\_\_\_\_

Cement \_\_\_\_\_ PVC \_\_\_\_\_

Bentonite \_\_\_\_\_ Other \_\_\_\_\_

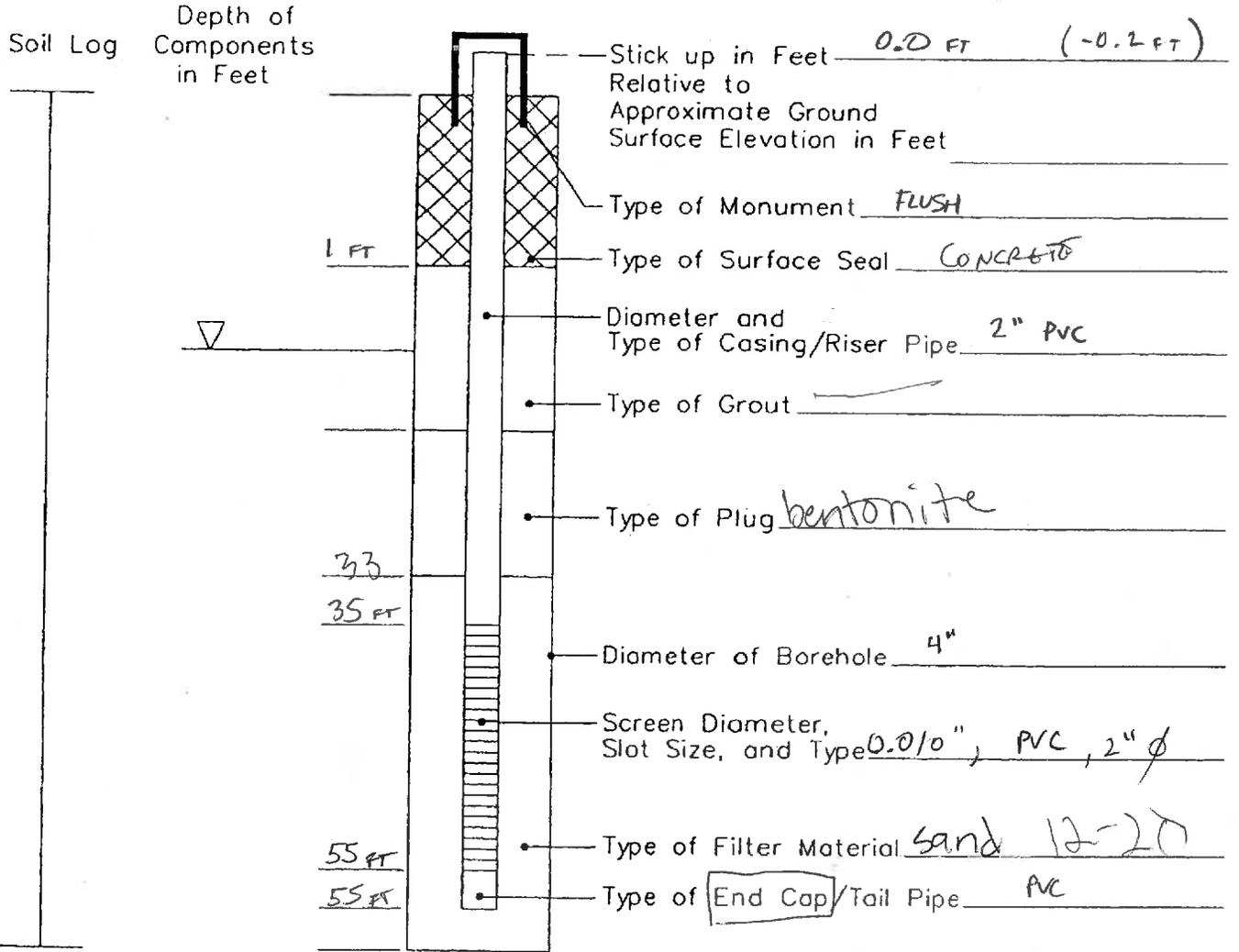
# Installation Report

# Monitoring Well DMW-105

Project NMB Job No. 1940904 Date 10/19/2020

Location 601 DEXTER AVE, SUATME, WA HC Observer BLITZ Driller HOLO CENG

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION / SAMPLING



Remarks: 20 FT SCREEN

ECOLOGY TAB BNF363

### Materials Tally:

Sand ||||| (13) (13) Monument 1  
 Cement ||||| (4) PVC 1x5, 3x10, 2x10 SCTOP  
 Bentonite ||||| (7) (7) Other \_\_\_\_\_

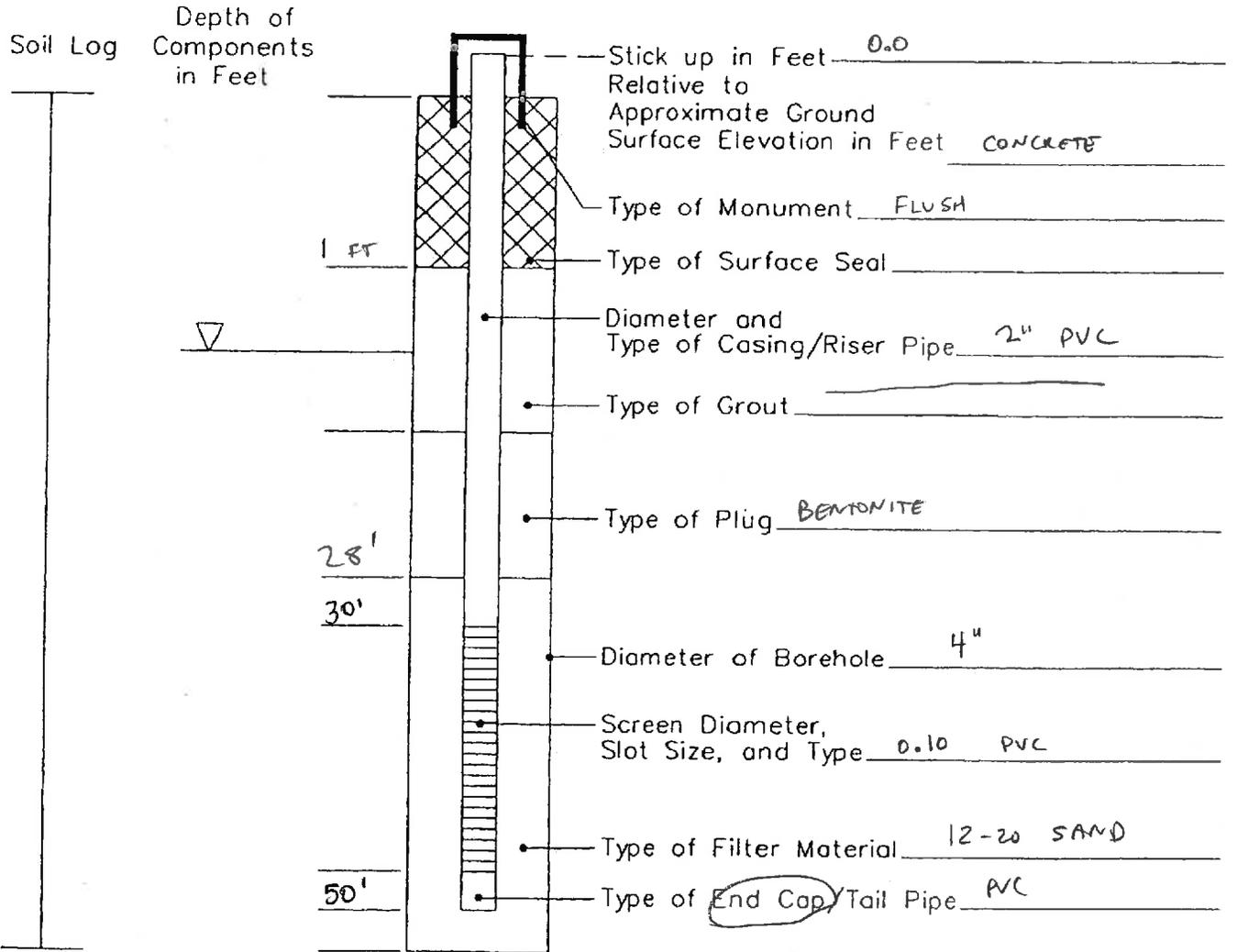
# Installation Report

# Monitoring Well DMW-115

Project MMB Job No. 1940904 Date 10/20/20

Location 601 DEXTER, SEATTLE HC Observer B LYLE Driller Holocore

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION/SAMPLING



Remarks: 20 FT SCREEN

ECOLOGY TAB BNF 365

### Materials Tally:

Sand |||| Monument \_\_\_\_\_

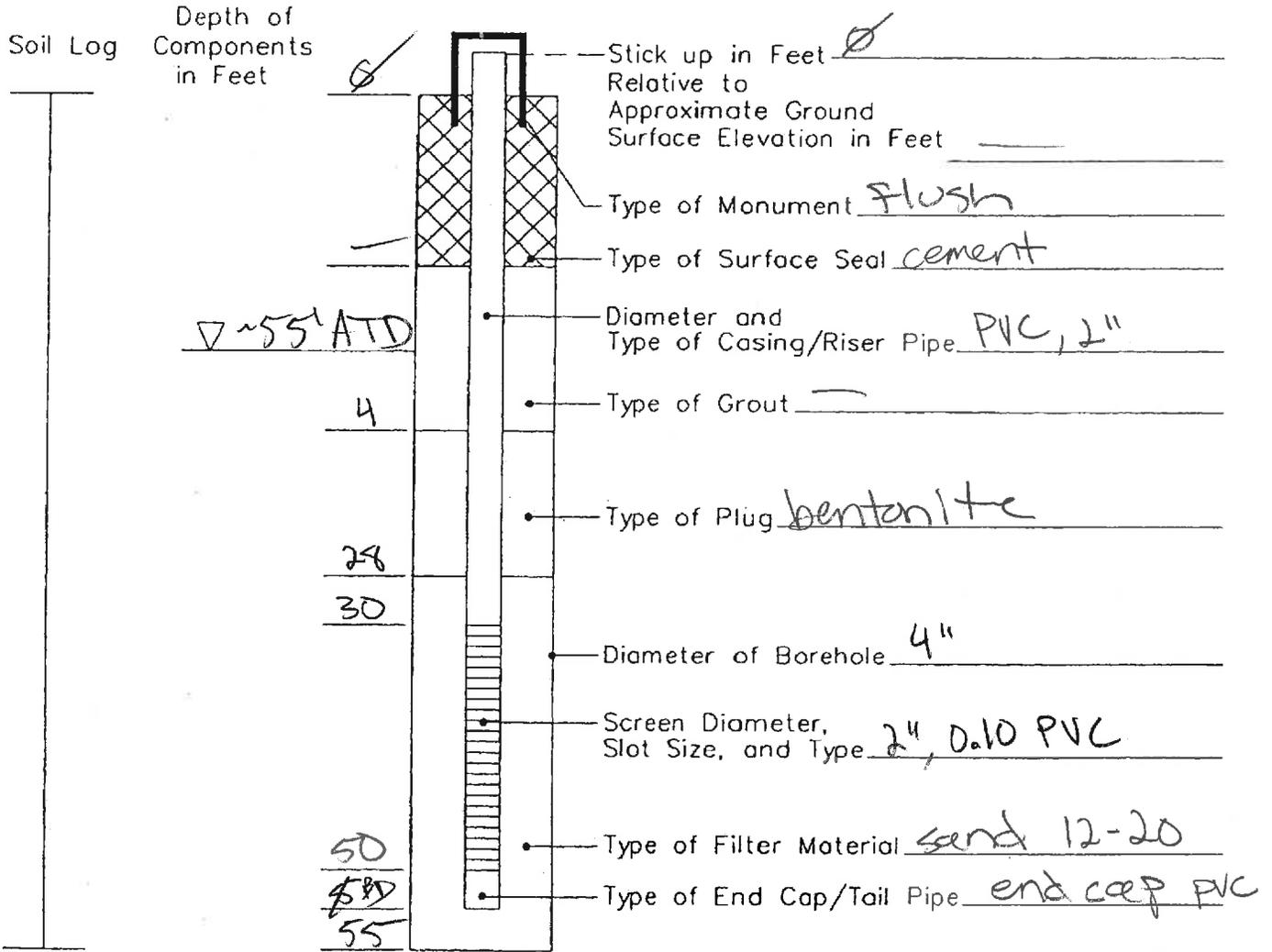
Cement | PVC \_\_\_\_\_

Bentonite || Other \_\_\_\_\_

# Installation Report

# Monitoring Well DMW-125

Project MMB Job No. 1940904 Date 10/20/2020  
 Location 615 Dexter Alley HC Observer Dozier Driller Hidacene  
 Type of Well (Observation, Sampling, Vapor Extraction) Monitoring Well



Remarks: 20ft screen  
Ecology tag BNF 364

Materials Tally:

Sand <u>     </u>	Monument <u>1</u>
Cement <u>     </u>	PVC <u>   </u> riser <u>2x10'</u> screen
Bentonite <u>     </u>	Other _____

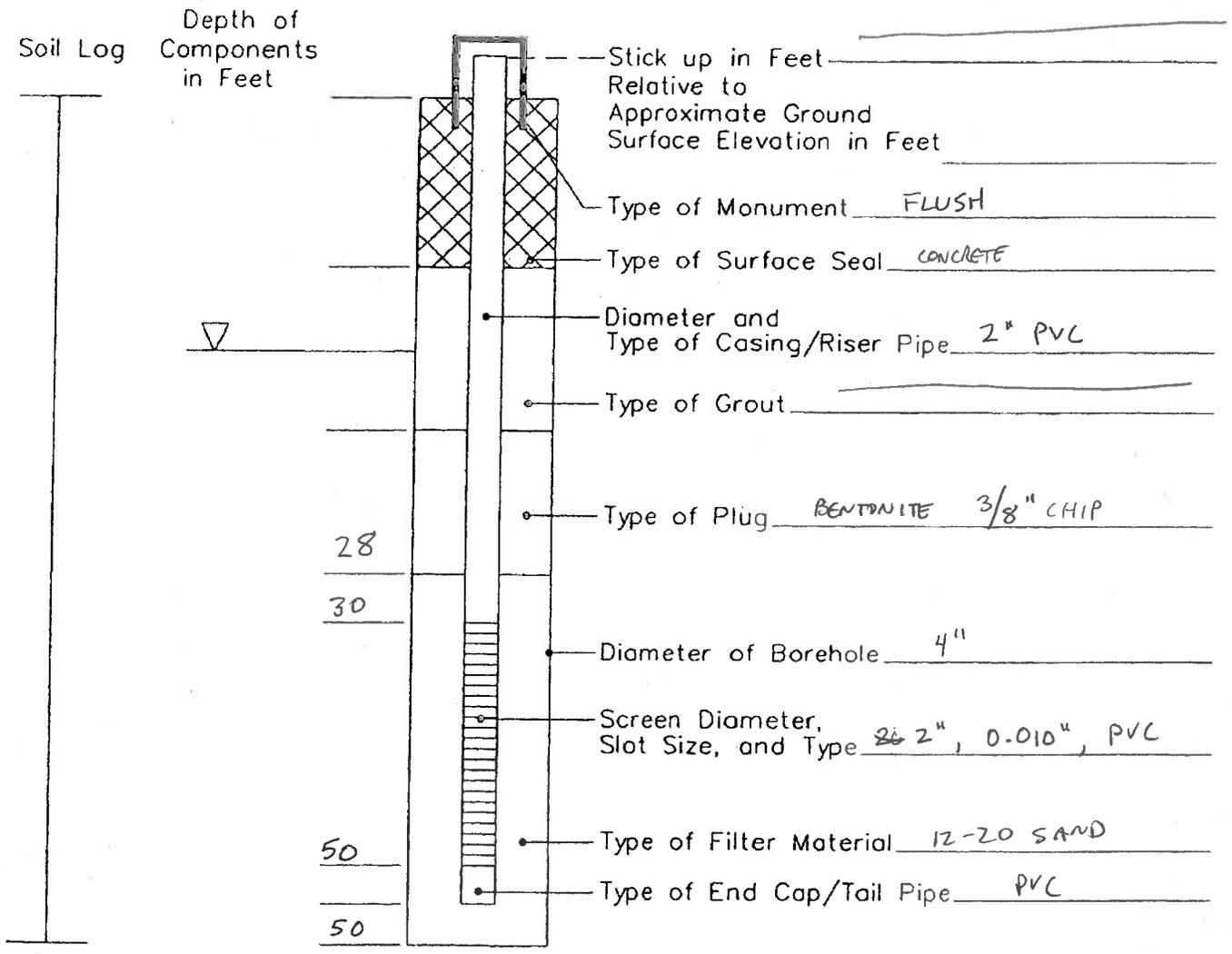
# Installation Report

# Monitoring Well DMW-135

Project MMB Job No. 1940904 Date 10/23/2020

Location ALLEY AT 601 DEXTER, SEATTLE HC Observer B LYLE Driller HOLT SERVICES

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION / SAMPLING



Remarks: 20 FT SCREEN

ECOLOGICAL TAG: BMP376

Materials Tally:

Sand _____	Monument _____
Cement _____	PVC _____
Bentonite _____	Other _____

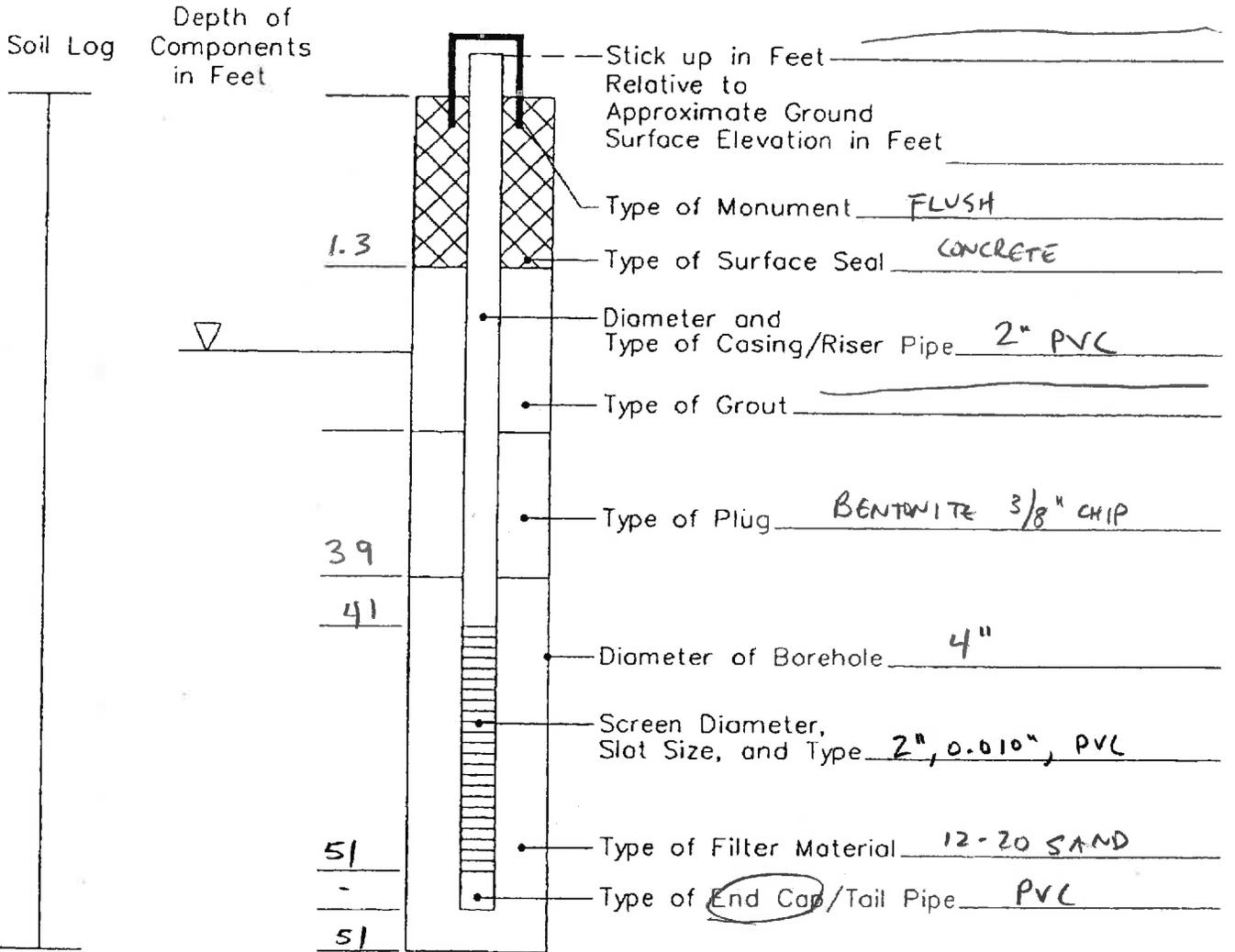
# Installation Report

# Monitoring Well DMW-145

Project MMB Job No. 1940904 Date 10/28/2020

Location ALLEY @ AURORA AVE, 601/615 DENTAL, SEATTLE, WA HC Observer B LYTLE Driller AEC

Type of Well (Observation, Sampling, Vapor Extraction) OBSERVATION/SAMPLING



Remarks: ECOLOGY TAG: BLY 433

WELL CASING WAS LIFTED 3-4 FT BY DRILLER WHILE SETTING PLUG IN BOREHOLE. ENTIRE WELL WAS PULLED AND BORE HOLE CLEANED OUT TO REPLACE WELL CASING.

### Materials Tally:

Sand \_\_\_\_\_ Monument \_\_\_\_\_

Cement \_\_\_\_\_ PVC \_\_\_\_\_

Bentonite \_\_\_\_\_ Other \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-15

WELL LOCATION DESC. (for new wells) 615 Dexter, lower parking lot, at base of ramp.  
 (e.g., 20' NW of E corner of building A)

PROJECT MMB DATE/TIME SAMPLED 3/21/19 1600

JOB NO. 1940901 TIDALLY INFLUENCED YES  NO

PROJECT MANAGER Boy Jensen WELL DEPTH IN FEET 30'

FIELD REPS Doyle SCREENED INTERVAL IN FEET 20-30'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 30' CASING VOLUME IN GALLONS 1.52

DEPTH TO SEDIMENT (DTS) IN FEET 30.32' [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 21.01' PURGE VOLUME IN GALLONS \_\_\_\_\_

(DTS - DTW) 9.31' ACTUAL PURGE IN GALLONS \_\_\_\_\_

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in %	Turbidity	ORP in mV	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1551	0.2	6.91	16.3	439.4	48.8	120	123	cloudy, NO, NS
1552	0.5	7.05	16.1	440.7	49.0	100	114.3	cloudy, NO, NS
1554	1	7.16	16.0	437.7	49.7	100	114	cloudy, NO, NS
1555	1.5	7.22	16.1	434	49.0	500	110	cloudy-turbid, NO, NS
sample: 1600								

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	Sub. pump	0.2	25
Sample	"	"	"

Boils dry? Yes  No

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume drums on site at MMB

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
amber	2	TPH-	Y	2222
amber	2	PAHs	N	
voa	4	VOCs	Y	
poly	4	Metals + TSS	V/N	

Total number of Bottles 12

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Pump Type/Tubing Type Proactive SS/PE Type/Brand/Serial No./Material Units \_\_\_\_\_

Temp/pH/E.C. meter VSI Pro DSS

Bailer Type \_\_\_\_\_ Water Level Probe waterline

Filter Type \_\_\_\_\_ Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_

# Groundwater Sampling Data - Well I.D.

DMW-1S

Project 615 Dexter  
 Job No. 19409-04-05  
 Project Manager M. Dagel  
 Field Reps. B. Dozier/B. Lytle/J. Higgins/A. Nakahara

Date/Time Sampled March 18 2020 0945  
 Tidally Influenced Yes  No   
 Well Depth in Feet 28.2 (bgs)  
 Screened Interval in Feet 17 to 28.2 (bgs)

## 1) Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC) *TOC is 0.29' BGS*

Well Depth 28.2 (bgs)  
 Depth of Sediment (DTS) in Feet 29.89  
 Depth of Water (DTW) in Feet 22.98  
 (DTS - DTW) 6.91

Casing Volume in Gallons 1.13  
 [2" diameter = x 0.163 gal/ft]  
 Purge Volume in Gallons 3.38  
 Actual Purge in Gallons 1.5

Time	No. of Gallons Purged	pH	Temp in °C	µS/cm Conduct in mS/cm	Diss Oxygen in mg/L	Turbidity in NTU	ORP in mV	Comments: Quality, Recovery Color, Odor, Sheen, Accumulated Silt/Sand
START 0915	0.1	7.22	14.3	407.1	3.37	28.23	197.0	INITIALLY CLEAR, NS, STRONG SOLVENT/PETROLEUM-LIKE ODOR
0923	0.5	7.27	14.4	409.2	1.64	32.16	100.4	CLEAR, NS, " " " "
0929	1.0	7.29	14.2	410.5	1.59	35.88	93.7	" " " " " "
SMPL 0945	1.5	7.31	13.8	414.0	1.61	8.20	102.7	CLEAR, NS, STRONG SOLVENT/PETROLEUM-LIKE ODOR

Comments @ 0924 REDUCED PUMPING RATE TO LOWER TURBIDITY @ 0930 REDUCED PUMP RATE FURTHER

	Method	Purging Rate in GPM	Depth of Equipment in Feet
Purge	PERISTALTIC	0.03	23.98' BTC
Sample	"	0.03	"

Bails dry? Yes  No   
 At no. of Casing Volumes \_\_\_\_\_  
 Purge Water Disposal Method/Volume Drum left on site

## 2) Sampling Data

Bottle Type	No of Containers	Analyses	Perserv.	Filter
VOA	4	NWTPH-Gx, BTEX/HVOCs	HCl	no
0.5 L Amber	1	NWTPH-Dx	no	no
0.5 L poly	1	Total MTCA	HNO3	no
0.5 L Poly	1	Dissolved MTCA	HNO3	yes
		Metals		

Total Number of Bottles 7  
 Duplicate Sample I.D. \_\_\_\_\_  
 Field Blank I.D. \_\_\_\_\_  
 Rinseate Sample I.D. \_\_\_\_\_

## 3) Field Equipment

Pump Type/Tubing Type PERISTALTIC/PE  
 Bailer Type \_\_\_\_\_  
 Filter Type 0.45 µm

Type/Brand/Serial No./Material/Units  
 Temp/pH/E.C./D.O YSI 055  
 Water Level Probe WATERLINE  
 Other \_\_\_\_\_

## 4) Well Conditions

OK  Not OK

Explain \_\_\_\_\_



# Groundwater Sampling Data - Well I.D.

DMW-3IA

Project 615 Dexter  
 Job No. 19409-04-05  
 Project Manager M. Dage  
 Field Reps. B. Dozier B. Lytle/J. Higgins/A. Nakahara

Date/Time Sampled March 18 2020 / 1237  
 Tidally Influenced Yes  No   
 Well Depth in Feet 48.75  
 Screened Interval in Feet 38.75 to 48.75

**1) Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC) → -0.29'**

Well Depth 48.75  
 Depth of Sediment (DTS) in Feet 49.61'  
 Depth of Water (DTW) in Feet 25.32'  
 (DTS - DTW) 24.29

Casing Volume in Gallons 3.96  
 [2" diameter = x 0.163 gal/ft]  
 Purge Volume in Gallons 11.88  
 Actual Purge in Gallons 5.0

start @ 1146  
SMPL  
SD

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in µS/cm	Diss Oxygen in mg/L	Turbidity in NTU	ORP in mV	Comments: Quality, Recovery Color, Odor, Sheen, Accumulated Silt/Sand
1155	1.0	7.42	16.3	492.5	0.54	6.30	54.1	initially clear, NO, NS
1207	2.0	7.06	16.3	536	0.20	5.10	-39.3	clear, NO, NS
1217	3.0	7.17	16.2	587	0.18	3.31	-58.0	" " "
1228	4.0	7.20	16.4	606	0.15	2.88	-68.3	" " "
1237	5.0	7.21	16.2	614	0.14	2.35	-73.2	" " "

Comments \_\_\_\_\_

	Method	Purging Rate in GPM	Depth of Equipment in Feet
Purge	monsoon ss sub pump	0.1	38'
Sample	"	"	"

Bails dry? Yes  No

At no. of Casing Volumes \_\_\_\_\_

Purge Water Disposal Method/Volume Drum left on site

**2) Sampling Data**

Bottle Type	No of Containers	Analyses	Perserv.	Filter
VOA	4	NWTPH-Gx, BTEX/HVOCs	HCl	no
0.5 L Amber	1	NWTPH-Dx	no	no
0.5 L poly	1	Total MTCA	HNO3	no
0.5 L Poly	1	Dissolved MTCA	HNO3	yes

Total Number of Bottles 7

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

**3) Field Equipment**

Pump Type/Tubing Type ss sub pump/ PE  
 Bailer Type \_\_\_\_\_  
 Filter Type 0.45 µm

Type/Brand/Serial No./Material/Units  
 Temp/pH/E.C./D.O YSI DSS  
 Water Level Probe watertine  
 Other \_\_\_\_\_

**4) Well Conditions**

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-45

WELL LOCATION DESC. (for new wells)

(e.g., 20' NW of E corner of building A)

PROJECT 615 DEXTER

DATE/TIME SAMPLED 3/18/2022<sup>BL</sup> 3/19/2020 1558

JOB NO. 19409-04-05

TIDALLY INFLUENCED YES \_\_\_\_\_ NO X

PROJECT MANAGER M. DABEL

WELL DEPTH IN FEET 33'

FIELD REPS BLAKE LYLE

SCREENED INTERVAL IN FEET 23'-33'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 33' CASING VOLUME IN GALLONS 1.7

DEPTH TO SEDIMENT (DTS) IN FEET 32.80 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 22.28' PURGE VOLUME IN GALLONS 5.1

(DTS - DTW) 10.52 ACTUAL PURGE IN GALLONS \_\_\_\_\_

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in mg/L	NTU Turbidity	ORP in mV	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
START 1456	0.1	7.73	15.2	412.6	5.89	35.61	245.5	INITIALLY CLEAR, SLIGHT SOLVENT-LIKE ODOOR, NS
1513 <del>0313</del> <sup>BL</sup>	0.5	7.75	15.0	416.4	5.17	35.23	258.0	CLEAR, NS, MODERATE SOLVENT-LIKE ODOOR
1532	1.0	7.69	14.9	401.7	5.50	21.07	268.3	CLEAR, NS, MODERATE SOLVENT-LIKE ODOOR
sample: 1558	1.5	7.69	15.1	406.0	4.97	19.51	244.6	"", "", ""

Comments: @ 1515 REMOVED PUMPING RATE TO SEE IF NEW TURBIDITY DECREASES.

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	PERISTALTIC		28
Sample	"		"

Boils dry? Yes \_\_\_\_\_ No \_\_\_\_\_

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume

DRUM LEFT ON SITE

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
V OA	4	NWTPH-6x, BTEX/HVOC'S	HCl	NO
0.5L Amber	2	NWTPH-Dx, PAH'S	NO	NO
0.5L Poly	1	TOTAL METAL METALS	HNO3	NO
0.5L Poly	1	DISSOLVED METAL METALS	HNO3	YES

Total number of Bottles 8

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type PERISTALTIC

Temp/pH/E.C. meter YSI DSS

Bailer Type \_\_\_\_\_

Water Level Probe WATERLINE

Filter Type 0.45  $\mu m$

Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-SIA

WELL LOCATION DESC. (for new wells)

(e.g., 20' NW of E corner of building A)

PROJECT 615 DEXTER

DATE/TIME SAMPLED 3/18/2020 <sup>AL</sup> 3/19/2020 | 1400

JOB NO. 19409-04-05

TIDALLY INFLUENCED YES        NO X

PROJECT MANAGER M. DABEL

WELL DEPTH IN FEET 49.6

FIELD REPS B. LYTLE

SCREENED INTERVAL IN FEET 39.6 TO 49.6

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 49.6

CASING VOLUME IN GALLONS 1.9

DEPTH TO SEDIMENT (DTS) IN FEET 50.23

[2" diam = x .163 gal/ft    4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 38.71

PURGE VOLUME IN GALLONS 5.6

(DTS - DTW) 11.52

ACTUAL PURGE IN GALLONS 1.5

START

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/l$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand	
1158	0.1	8.86	15.7	419.1	2.18	25.13	300.7	INITIALLY CLEAR, NO, NS	
1237	1.0	8.96	16.6	421.2	1.66	38.40	200.9	CLEAR, NO, NS	
1321	1.5	8.92	16.2	427.6	3.95	72.52	122.6		
sample: 1800	1.5	NO PARAMETERS TAKEN AT SAMPLING TIME.					slightly turbid		

Comments: @ 1200 TURNED PUMP AS LOW AS POSSIBLE TO KEEP FLOW BUT NOT DRY WELL @ 1225 FLOW STOPPED AND WATER LEVEL IS AT THE PUMP. LOWERING 1' TO 45.6' @ 1238 FLOW IS INCONSISTENT, MUST KEEP ADJUSTING PUMP @ 1242 LOWERING PUMP TO 46.6'. WATER LEVEL IS AT PUMP. CONTINUED ON BACK.

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUBMERSIBLE	~ 20.1	44.6 47.6
Sample	SS SUB	~ 20.1	"

Boils dry? Yes        No         
At no. of casing volumes         
Purge Water Disposal Method/Volume  
DRUM LEFTS ON SITE

### 2 Sampling Data

ORDER  
1  
3  
2 {

Bottle Type	# of Containers	Analyses	Preserv.	Filter
VOA	4	NWTPH - GX, BTEX-HVOC'S	HCl	NO
0.5 L AMBER	1	NWTPH - DX	NO	NO
0.5 L POLY	1	TOTAL METAL METALS	HNO3	NO
0.5 L POLY	1	DISSOLVED METAL METALS	HNO3	YES Lab

Total number of Bottles 7  
Duplicate Sample I.D.         
Field Blank I.D.         
Rinseate Sample I.D.       

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type submersible / PE  
Bailer Type         
Filter Type       

Temp/pH/E.C. meter YSI DSS  
Water Level Probe waterline  
Other       

### 4 Well Conditions

OK  Not OK  Explain

## COMMENTS

① 1314 TALKED TO MALISSA. LOWERING PUMP  $1\frac{1}{2}$  AND, IF FLOW CAN BE MAINTAINED, WILL SAMPLE W/OUT STABLE PARAMETERS. @1340 PAUSING - LEAVING PUMP IN WELL (PER MALISSA) AND LETTING WELL RECHARGE. WILL SAMPLE DMW-45 IN THE MEANTIME.

② 1730 MAKE NOTE OF CLOUDINESS AT SAMPLING. USE AN UNFILTERED POLY FOR DISSOLVED METALS. (PER CALL W/ MALISSA). ACCORDING TO THE LAB, AMBER BOTTLES NEED  $\frac{1}{2}$  BOTTLE MINIMUM, POLY BOTTLES 10 mL ~~MINIMUM~~, VOA'S FULL.



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-5IA

WELL LOCATION DESC. (for new wells) 615/601 DEXTER, IN ALLEY  
 (e.g., 20' NW of E corner of building A)

PROJECT 1940904 MERRILL MEGABLOCK DATE/TIME SAMPLED 10/15/2020 0844

JOB NO. 1940904/10 TIDALLY INFLUENCED YES  NO

PROJECT MANAGER M. DAUER / M. GOODMAN WELL DEPTH IN FEET 50'

FIELD REPS B. LITTLE SCREENED INTERVAL IN FEET 40-50'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 50' CASING VOLUME IN GALLONS 1.33

DEPTH TO SEDIMENT (DTS) IN FEET 50.1' BTR [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 41.96' BTR PURGE VOLUME IN GALLONS 4.0

(DTS - DTW) 8.14 ACTUAL PURGE IN GALLONS 0.1

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in _____	Diss. Oxygen in _____	Turbidity	ORP in _____	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand

sample:

Comments: NO PARAMETERS TAKEN AS WELL RAN DRY, PER PROJECT NUMBERS

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	<u>SS SUBMERSIBLE</u>	<u>~ 0.07</u>	<u>45'</u>
Sample	<u>"</u>	<u>"</u>	<u>"</u>

Boils dry? Yes  No

At no. of casing volumes 1

Purge Water Disposal Method/Volume ON SITE DRUM / ~ 0.1 GAL

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
<u>0.5L AMBER</u>	<u>2</u>	<u>NUTPH-DK WITH &amp; W/OUT SULFADIAZOLE</u>	<u>---</u>	<u>---</u>

Total number of Bottles 2

Duplicate Sample I.D. ---

Field Blank I.D. ---

Rinseate Sample I.D. ---

### 3 Field Equipment

Pump Type/Tubing Type SS/SUB / PE TUBING Temp/pH/E.C. meter ---

Bailer Type --- Water Level Probe WATER LINE

Filter Type --- Other ---

4 Well Conditions OK  Not OK  Explain ---

# Groundwater Sampling Data - Well I.D.

DMW-6

Project 615 Dexter  
 Job No. 19409-04-05  
 Project Manager M. Dagal  
 Field Reps. B. Dozier/B. Lytle/J. Higgins/A. Nakahara

Date/Time Sampled March 16 2020 // 0956  
 Tidally Influenced Yes  No   
 Well Depth in Feet 43.25  
 Screened Interval in Feet 33.25 to 43.25

**1) Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC) -0.25'**

Well Depth 43.25  
 Depth of Sediment (DTS) in Feet 44.74'  
 Depth of Water (DTW) in Feet 28.86'  
 (DTS - DTW) 44.74' - 28.86' = 15.88'

Casing Volume in Gallons 2.39  
 [2" diameter = x 0.163 gal/ft]  
 Purge Volume in Gallons 7.77  
 Actual Purge in Gallons 6.0

BD Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu$ S/cm	Diss Oxygen in mg/L	Turbidity in NTU	ORP in mV	Comments: Quality, Recovery Color, Odor, Sheen, Accumulated Silt/Sand
0918	1.0	6.08	15.3	373.0	3.11	13.20	226.5	initially clear, NO, NS
0926	2.0	5.94	15.4	428.0	1.29	5.74	158.8	clear, NO, NS
0933	3.0	6.00	15.4	428.2	1.12	4.31	138.0	clear, NO, NS
0941	4.0	6.05	15.5	436.1	0.87	3.57	127.9	clear, NO, NS
0947	5.0	6.06	15.6	441.9	0.69	3.00	121.4	" " "
0956	6.0	6.04	15.5	437.2	0.74	2.60	118.9	" " "

Comments

	Method	Purging Rate in GPM	Depth of Equipment in Feet
Purge	monsoon ss sub pump	0.1	36.5
Sample	"	"	"

Bails dry? Yes  No   
 At no. of Casing Volumes \_\_\_\_\_  
 Purge Water Disposal Method/Volume Drum left on site

**2) Sampling Data**

Bottle Type	No of Containers	Analyses	Perserv.	Filter
VOA	4	NWTPH-Gx, BTEX/HVOCs	HCl	no
0.5 L Amber	1	NWTPH-Dx	no	no
0.5 L poly	1	Total MTCA	HNO3	no
0.5 L Poly	1	Dissolved MTCA	HNO3	yes

Total Number of Bottles 7  
 Duplicate Sample I.D. \_\_\_\_\_  
 Field Blank I.D. \_\_\_\_\_  
 Rinseate Sample I.D. \_\_\_\_\_

**3) Field Equipment**

Pump Type/Tubing Type ss pump / PE  
 Bailer Type \_\_\_\_\_  
 Filter Type 0.45  $\mu$ m

Type/Brand/Serial No./Material/Units  
 Temp/pH/E.C./D.O YSI DSS  
 Water Level Probe waterline  
 Other \_\_\_\_\_

**4) Well Conditions**

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-7S

WELL LOCATION DESC. (for new wells) \_\_\_\_\_

(e.g., 20' NW of E corner of building A)

PROJECT Mercer Megablock

DATE/TIME SAMPLED 11/2/2020 0956

JOB NO. 1940904

TIDALLY INFLUENCED YES \_\_\_\_\_ NO X

PROJECT MANAGER M Dagle/M Goodman

WELL DEPTH IN FEET \_\_\_\_\_

FIELD REPS B LITTLE

SCREENED INTERVAL IN FEET 28-38

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 38' CASING VOLUME IN GALLONS 1.6  
 DEPTH TO SEDIMENT (DTS) IN FEET 38.10 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 28.09 PURGE VOLUME IN GALLONS 4.9  
 (DTS - DTW) 10.01 ACTUAL PURGE IN GALLONS 3.0

INITIAL

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in mV	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
0859	0.1	7.54	16.4	496.9	5.46	62.42	93.7	INITIALLY SLIGHT BROWN TURBIDITY, NO NS
0920	1.0	7.13	17.8	499.4	1.66	18.21	-11.5	CLEAR, NO, NS
0940	2.0	7.04	18.1	479.0	1.20	15.70	-20.7	" , " , "
sample: 0956	3.0	7.08	18.2	466.6	1.18	24.21	-29.9	" , " , "

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUB	0.08	33
Sample	"	"	"

Boils dry? Yes \_\_\_\_\_ No X

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume  
ON SITE DRUM / 3.5 bbl

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	---	---
40 mL VOA	3	TPH-Gx, BTEX	HCl	---

Total number of Bottles 4

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB / PE

Temp/pH/E.C. meter YSI DSS PRO

Bailer Type \_\_\_\_\_

Water Level Probe WATER LINE

Filter Type \_\_\_\_\_

Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-8S

WELL LOCATION DESC. (for new wells)  
(e.g., 20' NW of E corner of building A)

SIDEWALK OF DEXTER AVENUE (WEST SIDE OF STREET)

PROJECT Mercer Megablock

DATE/TIME SAMPLED 11/2/2020 10:29

JOB NO. 1940904

TIDALLY INFLUENCED YES  NO

PROJECT MANAGER M Dage/M Goodman

WELL DEPTH IN FEET 38'

FIELD REPS J VANORVAL

SCREENED INTERVAL IN FEET 28-38

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 38' CASING VOLUME IN GALLONS 1.5  
 DEPTH TO SEDIMENT (DTS) IN FEET 37.75 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 28.73 PURGE VOLUME IN GALLONS 4.5  
 (DTS - DTW) 9.02 ACTUAL PURGE IN GALLONS 4.0

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu\text{S}/\text{cm}$	Diss. Oxygen in $\text{mg}/\text{L}$	Turbidity	ORP in $\text{mV}$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
0856	0.1	7.46	17.1	0.304	5.12	4.13	79.3	
0916	1	6.96	16.9	0.304	3.55	1.21	45.1	
0940	2	6.99	17.8	0.311	2.95	0.88	3.8	
1008	3	7.01	18.0	0.311	2.90	1.35	-9.6	
sample: 1029	4	6.98	18.2	0.303	2.95	1.21	-15.1	

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	<u>SS SUBMERSIBLE</u>	<u>0.04</u>	<u>33</u>
Sample	<u>"</u>	<u>"</u>	<u>"</u>

Boils dry? Yes  No

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume  
ONSITE DRUM 4 GALLONS

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	<u>-</u>	<u>-</u>
40 mL VOA	3	TPH-Gx, BTEX	<u>HCl</u>	<u>-</u>

Total number of Bottles 4

Duplicate Sample I.D. -

Field Blank I.D. -

Rinseate Sample I.D. -

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB/PE

Temp/pH/E.C. meter YSI PRODSS

Bailer Type -

Water Level Probe WATER LINE

Filter Type -

Other -

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-9S

WELL LOCATION DESC. (for new wells) \_\_\_\_\_

(e.g., 20' NW of E corner of building A)

PROJECT Mercer Megablock

DATE/TIME SAMPLED 11/2/2020 1143

JOB NO. 1940904

TIDALLY INFLUENCED YES \_\_\_\_\_ NO X

PROJECT MANAGER M Dagle/M Goodman

WELL DEPTH IN FEET 33

FIELD REPS B LITTLE

SCREENED INTERVAL IN FEET 23-33

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 33' CASING VOLUME IN GALLONS 0.5

DEPTH TO SEDIMENT (DTS) IN FEET 32.20 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 29.00 PURGE VOLUME IN GALLONS 1.5

(DTS - DTW) 3.20 ACTUAL PURGE IN GALLONS 1.0

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
<i>INITIAL</i> 0.1	0.1	7.30	18.6	527	4.49	11.26	32.7	INITIALLY CLEAR, NO, NS
1134	0.5	6.86	18.0	522	2.83	4.95	46.8	CLEAR, NO, NS
<i>SAMPLE</i> 1143	1.0	6.83	18.1	522	2.75	3.84	47.3	" , " , "
<i>sample:</i>								

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	PERISMATIC	0.06	30
Sample	"	"	"

Boils dry? Yes \_\_\_\_\_ No X

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume

ON SITE PUMP / 1.5 GAL

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	---	---
40 mL VOA	3	TPH-Gx, BTEX	HCl	---

Total number of Bottles 4

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type PERISMATIC / PE

Temp/pH/E.C. meter YSI PSS PRO

Bailer Type \_\_\_\_\_

Water Level Probe WATER LINE

Filter Type \_\_\_\_\_

Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-10S

WELL LOCATION DESC. (for new wells) PARTIALLY LOT 4 CORPUS NORTHWEST  
(e.g., 20' NW of E corner of building A)

PROJECT Mercer Megablock

DATE/TIME SAMPLED 11/2/2020 1259

JOB NO. 1940904

TIDALLY INFLUENCED YES NO X

PROJECT MANAGER M Dage/M Goodman

WELL DEPTH IN FEET 55'

FIELD REPS J VANDERVAAL

SCREENED INTERVAL IN FEET 35-55'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 55'

CASING VOLUME IN GALLONS 3.63

DEPTH TO SEDIMENT (DTS) IN FEET 54.46

[2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]

DEPTH TO WATER (DTW) IN FEET 32.18

PURGE VOLUME IN GALLONS 10.8

(DTS - DTW) 22.28

ACTUAL PURGE IN GALLONS 6

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu\text{S}/\text{cm}$	Diss. Oxygen in $\text{mg}/\text{L}$	Turbidity	ORP in $\text{mV}$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1118	0.1	7.93	16.4	0.469	5.50	495.8	35.1	
1153	1	7.83	17.0	0.470	1.57	171.2	-49.8	
1205	2	7.83	17.1	0.468	1.28	586	-76.0	
1217	3	7.79	17.1	0.471	1.16	35.3	-100.0	
1230	4	7.77	17.2	0.477	1.11	25.2	-117.6	

sample

Comments: SAMPLE PARAMETERS CONTINUED ON BACK

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	<u>SS SUBMERSIBLE</u>	<u>0.07</u>	<u>45</u>
Sample	<u>SS SUBMERSIBLE</u>	<u>0.07</u>	<u>45</u>

Boils dry? Yes NO X

At no. of casing volumes 1

Purge Water Disposal Method/Volume ONSITE DRAIN 6 GALLONS

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	<u>-</u>	<u>-</u>
40 mL VOA	3	TPH-Gx, BTEX	HCl	<u>-</u>

Total number of Bottles 4

Duplicate Sample I.D. -

Field Blank I.D. -

Rinseate Sample I.D. -

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB/PE

Temp/pH/E.C. meter YSI PRODS5

Bailer Type -

Water Level Probe WATER LINE

Filter Type -

Other -

### 4 Well Conditions

OK

Not OK

Explain -

TIME	NO. OF GALLONS PURGED	PH	TEMP IN °C	CONDUCT IN mS/cm	DISS. OXYGEN IN mg/L	TURBIDITY	ORP IN mV
1243	5	7.79	17.2	0.430	1.09	26.5	-129.6
1259	6	7.80	17.3	0.481	1.06	24.3	-140.4

SAMPLE



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-11S

WELL LOCATION DESC. (for new wells)  
(e.g., 20' NW of E corner of building A)

PARKING LOT OF COPIERS NORTHWEST

PROJECT Mercer Megablock  
JOB NO. 1940904,  
PROJECT MANAGER M Dagle/M Goodman  
FIELD REPS J. VANDERWAL

DATE/TIME SAMPLED 11/2/20 1452  
TIDALLY INFLUENCED YES NO   
WELL DEPTH IN FEET 51'  
SCREENED INTERVAL IN FEET 30-50

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 51' CASING VOLUME IN GALLONS 2.8  
DEPTH TO SEDIMENT (DTS) IN FEET 50.52 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
DEPTH TO WATER (DTW) IN FEET 32.80 PURGE VOLUME IN GALLONS 8.4  
(DTS - DTW) 17.72 ACTUAL PURGE IN GALLONS 4

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1400	0.1	7.90	16.8	0.460	6.58	49.21	51.3	
1421	1	7.39	17.1	0.464	3.22	61.50	25.2	
1431	2	7.36	16.9	0.467	2.52	17.88	-15.0	
1441	3	7.55	17.0	0.437	3.24	10.23	-48.7	
sample: 1452	4	7.70	17.2	0.451	4.19	7.88	-51.9	

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUBMERSIBLE	0.1	40
Sample	"	"	"

Boils dry? Yes \_\_\_\_\_ No   
At no. of casing volumes -

Purge Water Disposal Method/Volume  
ON SITE DRUM 4 GALLONS

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	---	---
40 mL VOA	3	TPH-Gx, BTEX	HCl	---

Total number of Bottles 4

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB/PE  
Bailer Type \_\_\_\_\_  
Filter Type \_\_\_\_\_

Temp/pH/E.C. meter YSI Pro DSS  
Water Level Probe WATERLINE  
Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-12S

WELL LOCATION DESC. (for new wells) \_\_\_\_\_

(e.g., 20' NW of E corner of building A)

PROJECT Mercer Megablock

DATE/TIME SAMPLED 11/2/2020 1426

JOB NO. 1940904

TIDALLY INFLUENCED YES \_\_\_\_\_ NO

PROJECT MANAGER M Dagle/M Goodman

WELL DEPTH IN FEET 50'

FIELD REPS B LYRE

SCREENED INTERVAL IN FEET 30-50'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 50' CASING VOLUME IN GALLONS 2.5  
 DEPTH TO SEDIMENT (DTS) IN FEET 49.90 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 34.60 PURGE VOLUME IN GALLONS 7.5  
 (DTS - DTW) 15.3 ACTUAL PURGE IN GALLONS 5.0

INITIAL

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1305	0.1	7.21	16.2	468.2	3.41	598.6	23.5	INITIALLY SHOWS GRAY TURBIDITY, AND SLIGHT SMOKY WHITE SHEEN
1327	1.0	6.90	17.3	468.8	1.08	146.31	-34.1	MODERATE GRAY TURBIDITY, NO, NS
1344	2.0	6.99	17.0	479.9	1.50	72.51	-51.9	SLIGHTLY TURBID, NO, NS
1356	3.0	7.00	17.2	460.1	0.90	43.80	-63.6	CLEAR, NO, NS
1408	4.0	6.89	16.8	463.8	0.99	43.24	-60.5	" , " , "

sample:

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUB	0.07	40
Sample	"	"	"

Boils dry? Yes \_\_\_\_\_ No

At no. of casing volumes \_\_\_\_\_

Purge Water Disposal Method/Volume  
ON SITE DRUM / 5.5 GAL

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	---	---
40 mL VOA	3	TPH-Gx, BTEX	HCl	---

Total number of Bottles 4

Duplicate Sample I.D. \_\_\_\_\_

Field Blank I.D. \_\_\_\_\_

Rinseate Sample I.D. \_\_\_\_\_

### 3 Field Equipment

Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB / PE

Temp/pH/E.C. meter YSI O55 PRO

Bailer Type \_\_\_\_\_

Water Level Probe WATER LINE

Filter Type \_\_\_\_\_

Other \_\_\_\_\_

### 4 Well Conditions

OK  Not OK  Explain \_\_\_\_\_

	TIME	GAL	pH	T	COND	DO	TURB	ORP	COMMENT
	1408	4.0	6.89	16.8	463.8	0.99	43.24	-60.5	CLEAR, NO, NS
SAMPLE	1426	5.0	6.93	17.4	460.1	0.45	24.12	-75.1	" , " , "



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-13S

WELL LOCATION DESC. (for new wells) ALLEY OF COPIERS NORTHWEST  
 (e.g., 20' NW of E corner of building A)  
 PROJECT Mercer Megablock DATE/TIME SAMPLED 11/3/2020 1050  
 JOB NO. 1940904 TIDALLY INFLUENCED YES        NO X  
 PROJECT MANAGER M Dage/M Goodman WELL DEPTH IN FEET 50'  
 FIELD REPS J VANDEWAL SCREENED INTERVAL IN FEET 30-50'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 50' CASING VOLUME IN GALLONS 1.8  
 DEPTH TO SEDIMENT (DTS) IN FEET 49.02 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 37.71 PURGE VOLUME IN GALLONS 5.5  
 (DTS - DTW) 11.32 ACTUAL PURGE IN GALLONS 3

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1010	0.1	7.81	15.8	0.425	5.09	91.17	87.5	
1024	1	6.90	16.5	0.355	4.55	46.25	87.5	
1038	2	6.76	16.6	0.37	4.95	21.94	89.8	
1050	3	6.73	16.6	0.313	4.79	18.20	91.6	

sample:

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUBMERSIBLE	0.07	43
Sample	"	"	"

Boils dry? Yes        No X  
 At no. of casing volumes \_\_\_\_\_  
 Purge Water Disposal Method/Volume  
ONSITE DOWN 3 GALLONS

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	—	—
40 mL VOA	3	TPH-Gx, BTEX	HCl	—

Total number of Bottles 4  
 Duplicate Sample I.D. —  
 Field Blank I.D. —  
 Rinseate Sample I.D. —

### 3 Field Equipment

#### Type/Brand/Serial No./Material Units

Pump Type/Tubing Type SS SUB / PE Temp/pH/E.C. meter YSI PRO DSS  
 Bailer Type — Water Level Probe WATER LINE  
 Filter Type — Other —

4 Well Conditions OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-14S

WELL LOCATION DESC. (for new wells) West of Corvus Apartment (East of Aurora)  
 (e.g., 20' NW of E corner of building A)  
 PROJECT Mercer Megablock DATE/TIME SAMPLED 11/3/2020 1234  
 JOB NO. 1940904 TIDALLY INFLUENCED YES NO X  
 PROJECT MANAGER M Dage/M Goodman WELL DEPTH IN FEET 51'  
 FIELD REPS J. Vonderwa SCREENED INTERVAL IN FEET 41-51'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 51' CASING VOLUME IN GALLONS 1.2  
 DEPTH TO SEDIMENT (DTS) IN FEET 50.82 [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 43.76 PURGE VOLUME IN GALLONS 3.6  
 (DTS - DTW) 7.06 ACTUAL PURGE IN GALLONS 3

sample:

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in mV	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1140	0.1	7.10	15.5	2473	6.54	192.2	1.1	
1158	1	6.96	16.1	0.154	3.21	114.2	-865	
1213	2	6.79	17.4	0.326	1.37	82.2	-873	
1234	3	6.68	17.3	0.358	1.31	14.90	-81.0	

Comments: \_\_\_\_\_

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	<u>SS SUBMERSIBLE</u>		<u>47'</u>
Sample			

Boils dry? Yes \_\_\_\_\_ No X  
 At no. of casing volumes \_\_\_\_\_  
 Purge Water Disposal Method/Volume  
ONSITE DRUM 3 GALLONS

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5 L amber	1	TPH-Dx	-	-
40 mL VOA	3	TPH-Gx, BTEX	HCl	-

Total number of Bottles 4  
 Duplicate Sample I.D. -  
 Field Blank I.D. -  
 Rinseate Sample I.D. -

### 3 Field Equipment

Pump Type/Tubing Type SS SUB/PE Type/Brand/Serial No./Material Units  
 Temp/pH/E.C. meter YSI PROD33  
 Bailer Type - Water Level Probe WATERLINE  
 Filter Type - Other -

4 Well Conditions OK  Not OK  Explain \_\_\_\_\_



# HARTCROWSER Groundwater Sampling Data - Well I.D. DMW-SIA

WELL LOCATION DESC. (for new wells) 615/601 Dexter  
 (e.g., 20' NW of E corner of building A)  
 PROJECT MELLEN MEGAblock - DEXTER DATE/TIME SAMPLED 10/14/2020  
 JOB NO. 1940904/10 TIDALLY INFLUENCED YES      NO X  
 PROJECT MANAGER M Goodman / M PABEL WELL DEPTH IN FEET 50'  
 FIELD REPS B Lytle SCREENED INTERVAL IN FEET 40-50'

### 1 Purging Data/Field Measurements: All Measurements Relative to Top of Casing (TOC)

WELL DEPTH 50 CASING VOLUME IN GALLONS 1.34  
 DEPTH TO SEDIMENT (DTS) IN FEET 50.1' B70C [2" diam = x .163 gal/ft 4" diam = x .653 gal/ft]  
 DEPTH TO WATER (DTW) IN FEET 41.87' B70C PURGE VOLUME IN GALLONS 4.0  
 (DTS - DTW) 8.23' ACTUAL PURGE IN GALLONS 7.0-1.3

INITIAL

Time	No. of Gallons Purged	pH	Temp in °C	Conduct in $\mu S/cm$	Diss. Oxygen in $mg/L$	Turbidity	ORP in $mV$	Comments: quality, recovery, color, odor, sheen, accumulated silt/sand
1348	0.1	7.66	17.2	0.502	2.12	29.32	-10.8	INITIALLY CLEAR, NO, NS
1423	1.0	7.43	18.1	0.504	1.09	23.04	6.1	CLEAR, NO, NS
1510	~1.3							

sample:

Comments: <sup>1410</sup> WELL DRAWS WATER DOWN QUICKLY. FLOW IS AS LOW AS PUMP ALLOWS. KEPT WATERLINE DOWN WELL TO MONITOR WATER LEVEL SO PUMP DOESN'T RUN DRY. 1430 TURBIDITY SHOT UP AFTER 1 GALLON (60 NTU), DECREASED TO 30 NTU AFTER 5 MIN. CONTINUED ON BACK

	Method	Pumping Rate in GPM	Depth of Equip. in Feet
Purge	SS SUBMERSIBLE	0.03	45' B70C
Sample	"	"	"

Boils dry? Yes X No       
 At no. of casing volumes 1.0  
 Purge Water Disposal Method/Volume  
ON-SITE DRUM / 1.3 GAL

### 2 Sampling Data

Bottle Type	# of Containers	Analyses	Preserv.	Filter
0.5L AMBER	2	NH4-N-DX (WITH & W/O SILICA GEL)	—	—

Total number of Bottles 2  
 Duplicate Sample I.D.       
 Field Blank I.D.       
 Rinseate Sample I.D.     

### 3 Field Equipment

Pump Type/Tubing Type SS SUB/PE Temp/pH/E.C. meter YSI DSS PRO  
 Bailer Type      Water Level Probe WATERLINE  
 Filter Type      Other     

4 Well Conditions OK  Not OK  Explain

COMMENTS

- 1437 WATER LEVEL REQUIRES PUMP AT 45', LOWERING PUMP 1 FT.
- 1440 WATER LEVEL AT PUMP, LOWERED TO ~47 FT.
- 1443 WATER AT PUMP, LOWER TO ~48', WILL BE HAZED TO CONTINUE PURGE, CALVIN  
MARISSA
- 1500 WILL CONTINUE TO PUMP WELL "COMPLETELY DRY", THEN STOP PURGE FOR TODAY.  
RETURN tomorrow & SAMPLE IMMEDIATELY w/out WAITING FOR STABLE PARAMETERS  
PER M GOODMAN / M DABOL.
- 1510 WELL WILL NOT PRODUCE EVEN WHEN PUMPING VOLTAGE INCREASED.

# Well Development Data

Project MERCER MEGA BLOCK / DEXTER  
 Field Rep. JPBlandette

Job No. 1940904  
 Date 3/6/20

WELL NUMBER	DATE DEVELOPED	WELL DEPTH IN FEET	BEFORE DEVELOPMENT			AFTER			CASING VOLUME IN GALLONS	METHOD OF DEVELOPING	DEVELOPING VOLUME IN GALLONS	COMMENTS
			DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET	DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET				
DMW 3A	3/6/20	50	39.3 / 25.68	47.8 / 49.15	2 /	1.30	bailler (SS) + plastic pump	30	Arrived after pumping began, ~5 gal each, let recharge for 15-20 min + measured DTW/DTL  at 33 ft, started bailing indust. silica sand + found piece of PVC in bailer. Seems as though casing is broken + sand filled well + water draining. May need to re-dall.			
DMW 2S	3/6/20	40	27.53 / 23.15	34.0 / 34.20	2 /	1.05	plastic pump	30				
DMW 4S *	3/6/20	40	31.12 / 22.82	32.85 / 33.42		0.28	bailler + plastic pump	10				
DMW 6	3/6/20	50	28.27 / 28.95	42.4 / 44.25		2.37	plastic pump	25				
DMW 5A	3/6/20	50	37.63 / 38.05	48.1 / 49.65		1.71	bailler + plastic pump	< 5				

Drums added 3/9/20

DMW 2S

"S" (HH 1)

601 Dex HC Vac #17

MBGW-12 Soil #2 (13-25)

DMW-6 2

DMW-6 4

DMW-2S

DMW-6 3

DMW-6 1

0.63 gal  
FL

# Well Development Data

Project MMB Job No. 1945-084  
 Field Rep. A. Nakahara & B. Doster Date 3/16/2020

WELL NUMBER	DATE DEVELOPED	WELL DEPTH IN FEET	BEFORE DEVELOPMENT			AFTER			CASING VOLUME IN GALLONS	METHOD OF DEVELOPING	DEVELOPING VOLUME IN GALLONS	COMMENTS
			DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET	DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET				
Dmw -45-r	3/16/20	33	8.25 @ 1428: 26.61' 32.35' (3/16/2020)	32.84 32.81' (3/16/2020)	asew cm? 10.05' (?)	4.01 (X10=40.08)	plastic sub	<del>40.08</del>             (23)	pressurized, Poppelwies well cap removed allowed to equilibrate 0905-0915 plastic shavings in well, likely from cutting PVC rather 13 gal well ran dry, 1035, allowed to recharge until 1111 3 depth to water 30.25' ran dry again at 11 an additional 2-gal pumped. Still turbid. (AN) starting @ 1428, started purging again; 15 gallons before well dry again. Wait for recharge 1511-1605 Purged another 2 gallons before running dry @ 1616; turned off pump to allow recharge 1616-1655; purges another ~1 gal. Still very turbid gray.			

see reverse of 3/17/2020 notes

Well ID	Date	Well depth (ft)	DTW <sup>DIA</sup>	DT3 <sup>DIA</sup>	sed thickness	Casing vol	Method	Dev. gal	Notes
DMW-45-T	3/17/2020	33'	22.16'	33.06'	a few cm	<del>4.0</del> BD	dev. pump		opened well + allowed to equb. 0920-0944; initially v. turbid, gray; strong petro. odor, NS; became less turbid after a few mins; well dried after pumping 7.5 gal.
			30.72'	33.12'	~1 cm?	1.76			

# Well Development Data

Project MEDICAL MEGABLOCK  
 Field Rep. JOSH VANDERJAL

Job No. 1940904  
 Date 10/21 - 10/22

WELL NUMBER	DATE DEVELOPED	WELL DEPTH IN FEET	BEFORE DEVELOPMENT			AFTER			CASING VOLUME IN GALLONS	METHOD OF DEVELOPING	DEVELOPING VOLUME IN GALLONS	COMMENTS
			DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET	DEPTH TO WATER IN FEET	DEPTH TO SEDIMENT IN FEET	SEDIMENT THICKNESS IN FEET				
DW 105	10/21/20 10/22/20	55	32.41/ 39.81	54.71/ 54.80	0.22/ 0.20			3.6	SS BAILER 12 GALLONS	30	PUMP ISSUES RESULTED IN HAND BAILING ON 10/21 THEN PUMPED 10/22	
DW 115	10/23/20	50	32.14/ 48.1	49.90/ 49.98	0.10/ 0.05			2.8	PUMP 24 SS BAILER 24.5 GALLONS	28	BAILED 15 GALLONS WITH SS BAILER BEFORE WATER LEVEL FELL TO 49.20	
DW 125	10/28/20	50	34.61/ 47.44	46.81/ 49.95	3.19/ 0.05			1.9	PUMP 2.5 GALLONS SS BAILER 19 GALLONS	19	PUMP ISSUES RESULTED IN HAND BAILING REMAINING VOLUME	
DW 225	10/23/20	37	31.25/ 34.10	36.01/ 36.21	0.99			0.8	SS BAILER 9 GALLONS	9		
MBS-25	10/30/20	40	32.91/ 38.54	39.90/ 39.98	0.10/ 0.02			1.1	SS BAILER 11 GALLONS	11		

# **APPENDIX B**

## **Hydrogeology Evaluation Data**

## **APPENDIX B**

### **HYDROGEOLOGY EVALUATION DATA**

This appendix shows raw testing data, graphs, and other supporting information related to the hydrogeology of the Site.

#### **Slug Testing**

A summary of monitoring well construction details from the four monitoring wells slug tested is provided in Table B-2.

#### ***Field Methods***

Slug tests were performed by suddenly inserting or removing a 5-foot length of 0.1-foot-diameter solid PVC rod (slug) in a well and measuring the change in water levels as they returned to equilibrium. A test conducted by the insertion of the PVC rod into the well is referred to as a falling head test and the following removal of the rod is called a rising head test. Water levels were monitored using In-Situ Inc. Rugged Troll 200 non-vented and Level Troll 500 vented pressure transducers set at the bottom of the well during testing. The instruments automatically recorded depth of water above the instrument at 0.5 to 1 second intervals. Wells were opened at least 30 minutes prior to starting testing to allow water levels to equilibrate, and water levels were monitored after placing the transducers in the well to return to equilibrium conditions prior to testing. After inserting or removing the slug, water levels were allowed to recover to within 10 percent of initial displacement before beginning the following test. Two sets of falling and rising head tests were performed at each well to ensure consistent results. Additional sets of tests were performed in wells with short testing duration, and a single set of tests were performed in certain wells with long testing duration.

#### ***Analysis Methods***

The water level data generated from the tests were analyzed using the commercial software Aquifer<sup>Win32</sup> Version 3 (Environmental Simulations, Inc., 2003). The slug test analysis here uses the Bouwer and Rice method (Bouwer and Rice 1976; Bouwer 1989) to obtain an estimated value of hydraulic conductivity. This method is applicable to confined and unconfined aquifers and was used for all wells tested. The water level displacement data are plotted on a semi-log axis versus time, and hydraulic conductivity is determined by manually fitting a straight line to the displacement data.

## **Attachments**

Table B-1 – Vertical Hydraulic Gradients in Selected Well Pairs

Table B-2 – Monitoring Well Construction Summary

Table B-3 – Summary of Slug Test Results

Figure B-1 – DMW-1S and DMW-3IA Hydrographs

Figure B-2 – DMW-4S and DMW-5IA Hydrographs

Figure B-3 – DMW-1S Representative Slug Test Results

Figure B-4 – DMW-3IA Representative Slug Test Results

Figure B-5 – DMW-4S Representative Slug Test Results

Figure B-6 – DMW-5IA Representative Slug Test Results

**TABLE B-1**  
**VERTICAL HYDRAULIC GRADIENTS IN SELECTED WELL PAIRS**  
**SEATTLE DOT DEXTER PARCEL SITE**  
**SEATTLE, WASHINGTON**

Well ID	Screen Mid-point Elevation (ft)	Vertical Distance (ft)	October 21, 2019		January 13, 2020		March 19, 2020	
			Water Elevation (ft)	Gradient <sup>a</sup>	Water Elevation (ft)	Gradient <sup>a</sup>	Water Elevation (ft)	Gradient <sup>a</sup>
MW-305	32.31	20.2	31.69	0.11	32.01	0.11	36.03	0.26
MW-306	12.11		29.44		29.85		30.73	
MW-305	32.31	49.82	31.69	0.26	32.01	0.27	36.03	0.38
MW-307	-17.51		18.56		18.66		16.87	
MW-306	12.11	29.62	29.44	0.37	29.85	0.38	30.73	0.47
MW-307	-17.51		18.56		18.66		16.87	

a. Gradients (ft/ft) calculated as difference in groundwater elevations divided by distance between well pairs.  
 Negative values indicated upward gradient, positive value indicates downward gradient  
 Elevations are in NAVD88 datum in feet.

**TABLE B-2  
MONITORING WELL CONSTRUCTION SUMMARY  
SEATTLE DOT DEXTER PARCEL SITE  
SEATTLE, WASHINGTON**

Well ID	Boring Depth (ft)	Well Depth (ft)	Screen Interval Depth (ft)	Depth to Sediment (ft)	Depth to Water (ft)	Saturated Thickness (ft)	Screened Interval Soil Description
DMW-1S	30	28.2	17 - 27	29.8 <sup>a</sup>	22.37 <sup>a</sup>	7.43	(SM) silty SAND with gravel
DMW-2S	40	35.2	25 - 35	34.35 <sup>a</sup>	22.89 <sup>a</sup>	11.46	(SM) silty SAND with gravel
DMW-3IA	50	49.2	39 - 49	49.13 <sup>a</sup>	25.43 <sup>a</sup>	23.70	(SP) silty SAND with gravel and (ML) sandy SILT
DMW-4S	35	33.2	23 - 33	32.75 <sup>a</sup>	22.34 <sup>a</sup>	10.41	(SM) silty SAND with gravel
DMW-5IA	50	50	39.8 - 49.8	49.64 <sup>a</sup>	38.27 <sup>a</sup>	11.37	(SM) silty SAND and (SP) poorly graded SAND
DMW-6	50	43.6	34 - 44	44.74 <sup>a</sup>	28.86 <sup>a</sup>	15.88	(SM) silty SAND to silty SAND with gravel
DMW-7S	38	38	28 - 38	38.10 <sup>b</sup>	28.09 <sup>b</sup>	10.01	(SC) clayey SAND; (SP-SM) poorly graded SAND with silt and gravel; (CL) sandy lean CLAY; (SP) poorly graded SAND; (ML) SILT with sand; (SP-SM) poorly graded SAND with silt
DMW-8S	37	37	27 - 37	37.75 <sup>b</sup>	28.73 <sup>b</sup>	9.02	(SP) poorly graded SAND with gravel; (GP-GM) poorly graded GRAVEL with silt and sand; (SM) silty SAND with gravel; (SM) silty SAND
DMW-9S	33	33	23 - 33	32.20 <sup>b</sup>	29.00 <sup>b</sup>	3.20	(SP-SM) poorly graded SAND with silt and gravel; (SM) silty SAND with gravel
DMW-10S	55	55	35 - 55	54.46 <sup>b</sup>	32.18 <sup>b</sup>	22.28	(SM) silty SAND; (ML) sandy SILT
DMW-11S	50	50	30 - 50	50.52 <sup>b</sup>	32.80 <sup>b</sup>	17.72	(ML) SILT with sand; (SM) silty SAND with gravel; (Sm) silty SAND; (SP-SM) poorly graded SAND with silt
DMW-12S	55	50	30 - 50	49.90 <sup>b</sup>	34.60 <sup>b</sup>	15.30	(SM) silty SAND with gravel; (SP-Sm) poorly graded SAND with silt; (SM) silty SAND; (ML) SILT
DMW-13S	50	50	30 - 50	49.02 <sup>b</sup>	37.71 <sup>b</sup>	11.32	(SP) poorly graded SAND; (ML) SILT; (SP) poorly graded SAND with gravel; (SP-SM) poorly graded SAND with silt and gravel; (CL) lean CLAY with sand
DMW-14S	51	51	41 - 51	50.32 <sup>b</sup>	43.76 <sup>b</sup>	7.06	(SP-SM) poorly graded SAND with silt; (SP) poorly graded SAND

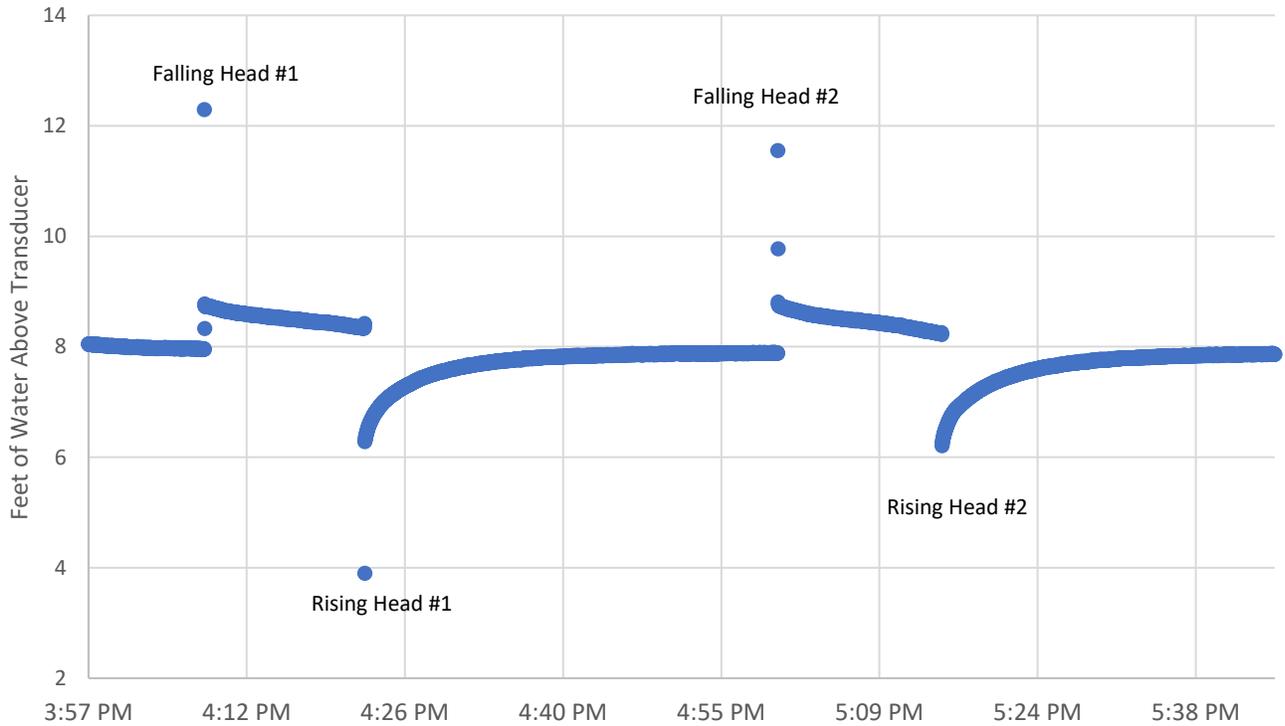
a. Depth to sediment and depth to water was measured below top of casing on March 23-27, 2020

b. Depth to sediment and depth to water was measured below top of casing on November 2-3, 2020

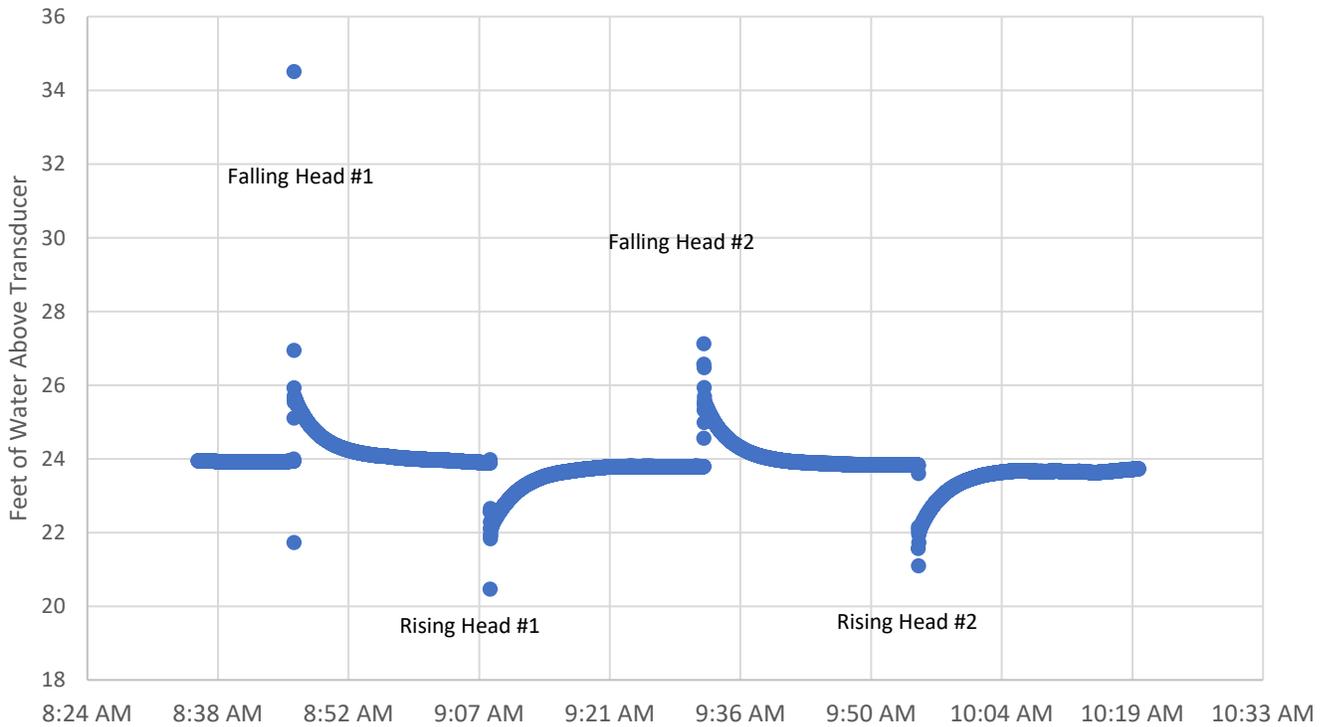
**TABLE B-3  
SUMMARY OF SLUG TEST RESULTS  
SEATTLE DOT DEXTER PARCEL SITE  
SEATTLE, WASHINGTON**

Well ID	Test Type	Test Number	Bouwer and Rice	
			K (ft/day)	K (cm/sec)
DMW-1S	Falling Head	Test 1	0.1	3.8E-05
	Rising Head	Test 1	0.6	2.0E-04
	Falling Head	Test 2	0.2	5.5E-05
	Rising Head	Test 2	0.7	2.3E-04
	Mean:			0.3
DMW-3IA	Falling Head	Test 1	0.6	2.3E-04
	Rising Head	Test 1	0.6	2.1E-04
	Falling Head	Test 2	0.7	2.5E-04
	Rising Head	Test 2	0.6	2.0E-04
	Mean:			0.6
DMW-4S	Falling Head	Test 1	0.1	2.4E-05
	Rising Head	Test 1	0.1	2.3E-05
	Mean:			0.1
DMW-5IA	Falling Head	Test 1	0.8	3.0E-04
	Rising Head	Test 1	0.3	1.1E-04
	Mean:			0.5

### DMW-1S Hydrograph



### DMW-3IA Hydrograph



Seattle DOT Dexter Parcel Site  
Seattle, Washington

#### DMW-1S and DMW-3IA Hydrographs

19409-04

07/21

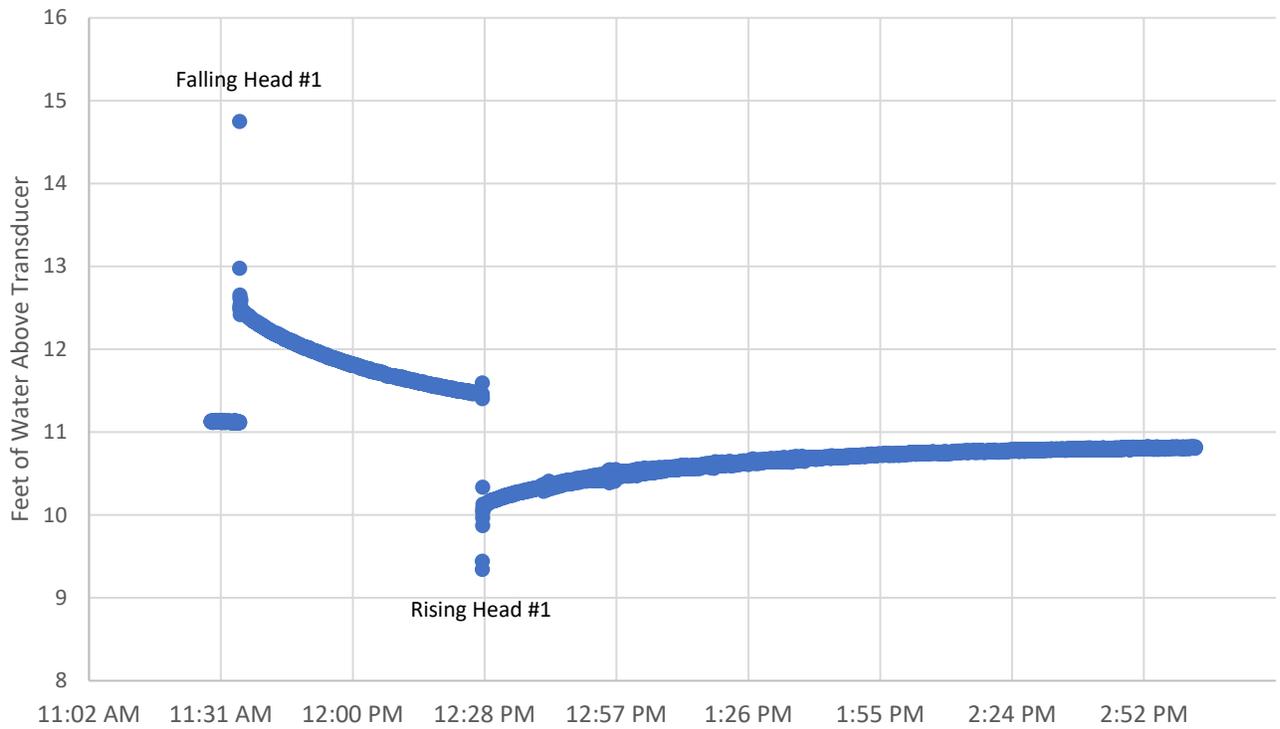


Figure

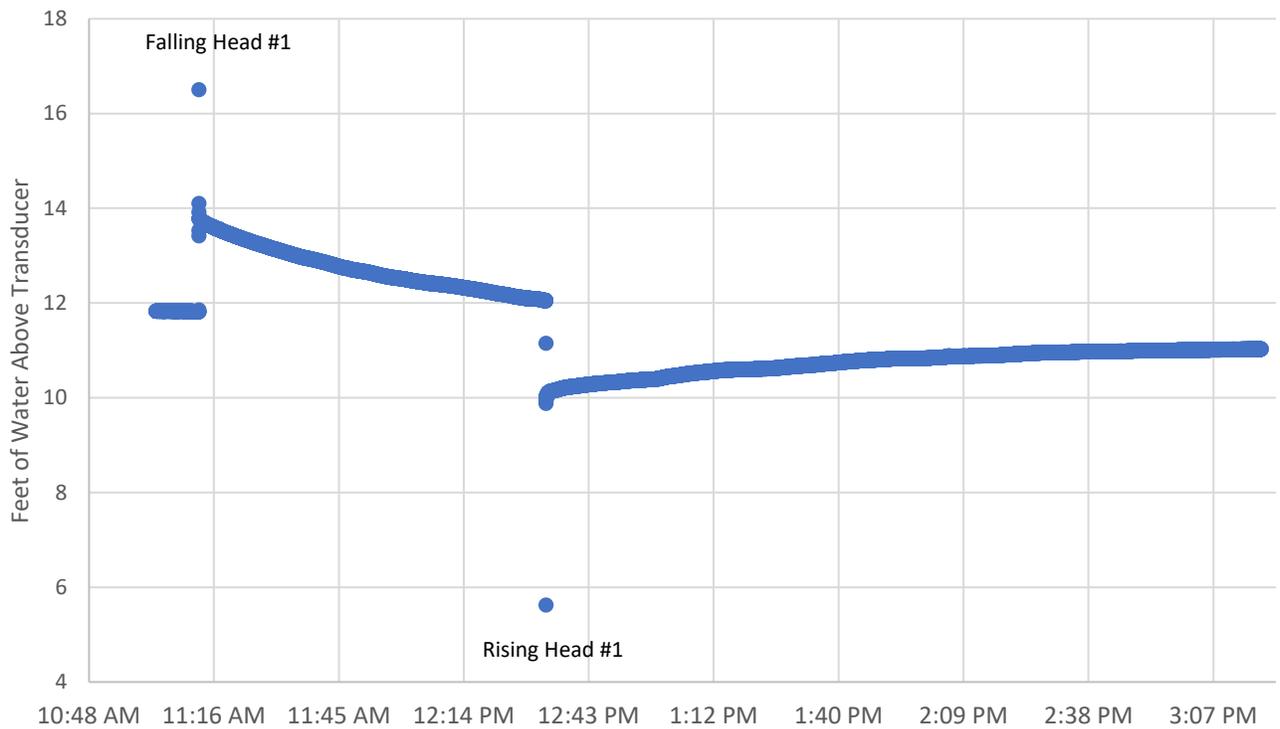
**B-1**

AUG 12/11/14 L:\Project Notebook\1795401 Mercer Island Multi family\Slug-test Files\Slug Test

### DMW-4S Hydrograph



### DMW-5IA Hydrograph



Seattle DOT Dexter Parcel Site  
Seattle, Washington

### DMW-4S and DMW-5IA Hydrographs

19409-04

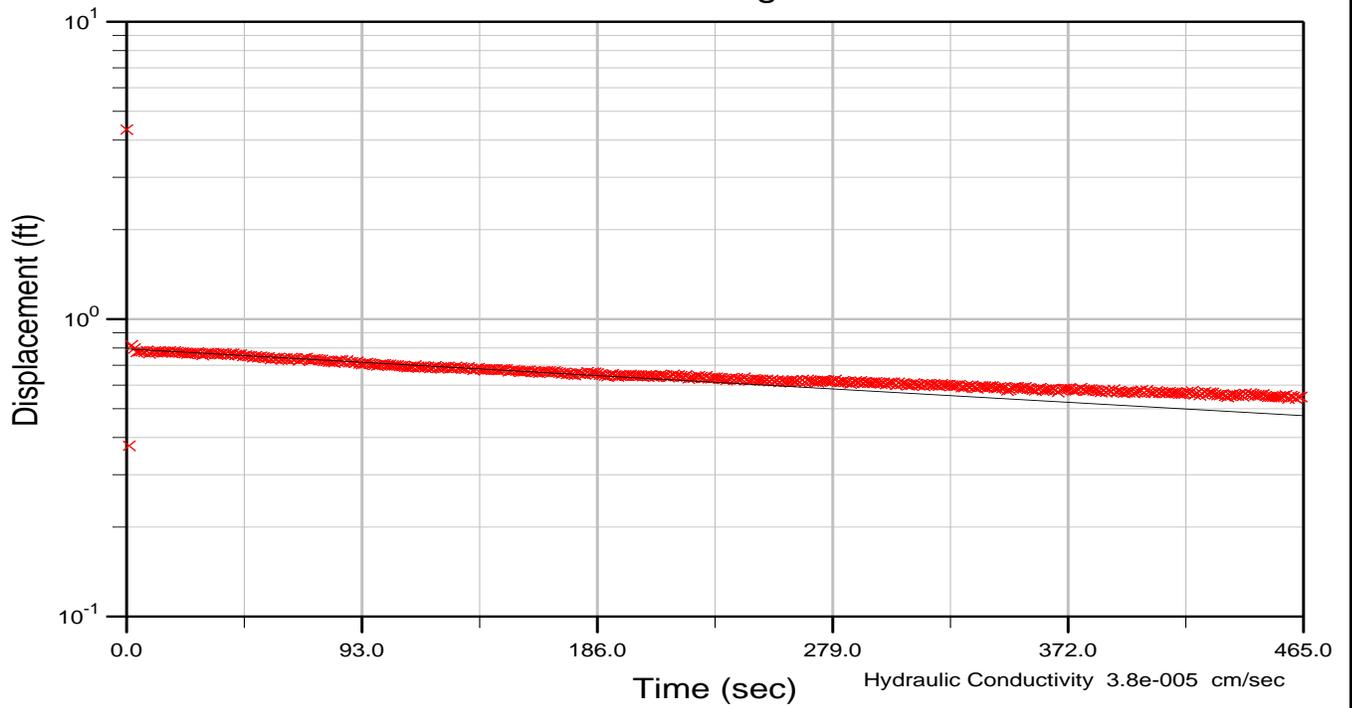
07/21



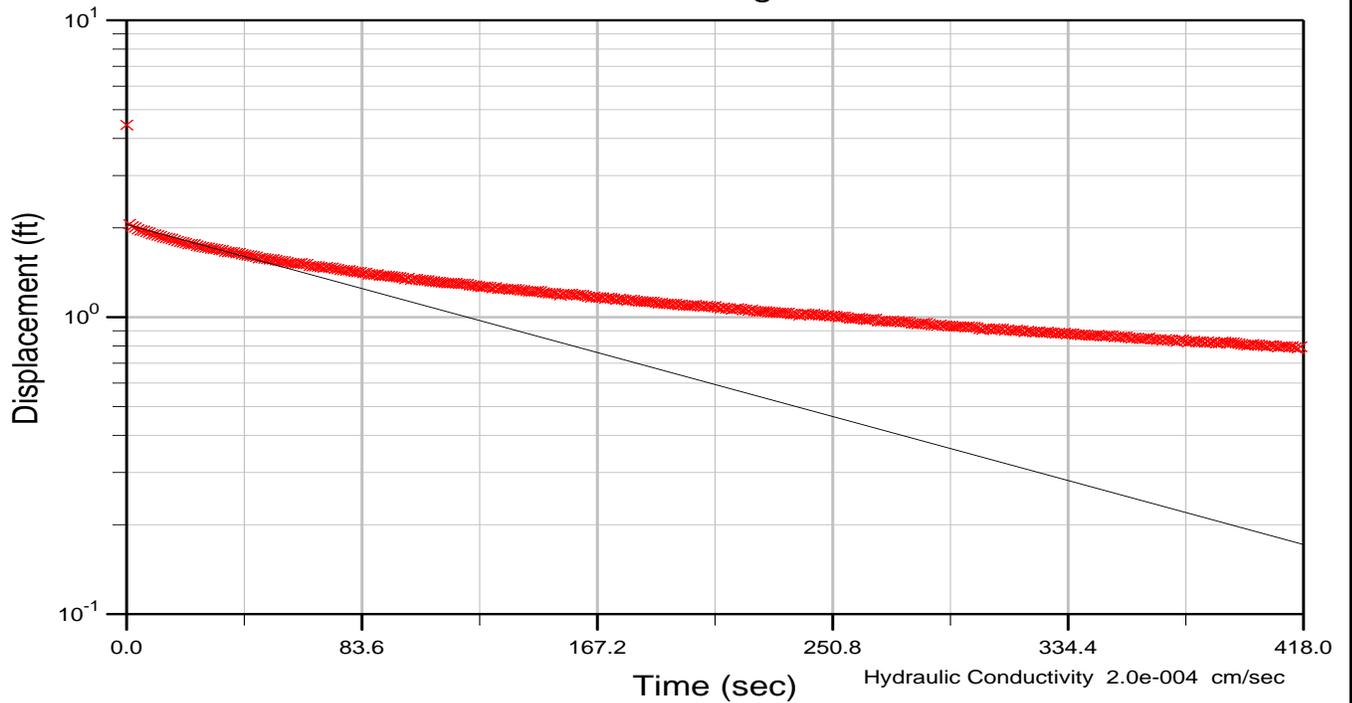
Figure

**B-2**

### DMW-1S Falling Head #1



### DMW-1S Rising Head #1



A:\G-12\11\14 L:\Project Notebook\1795401 Mercer Island Multi family\Slug-test Files\Slug Test

Note:  
Bouwer and Rice method was used for the slug test analysis.

Seattle DOT Dexter Parcel Site  
Seattle, Washington

#### DMW-1S Representative Slug Test Results

19409-04

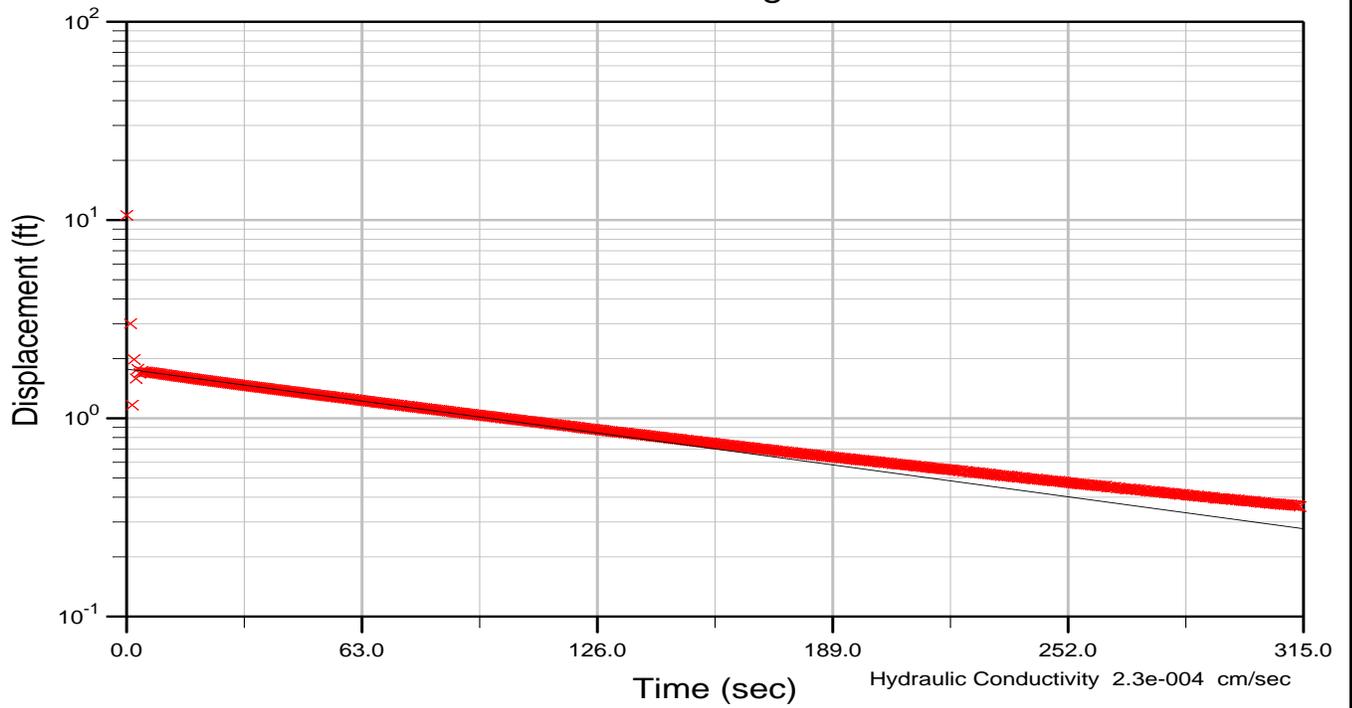
07/21



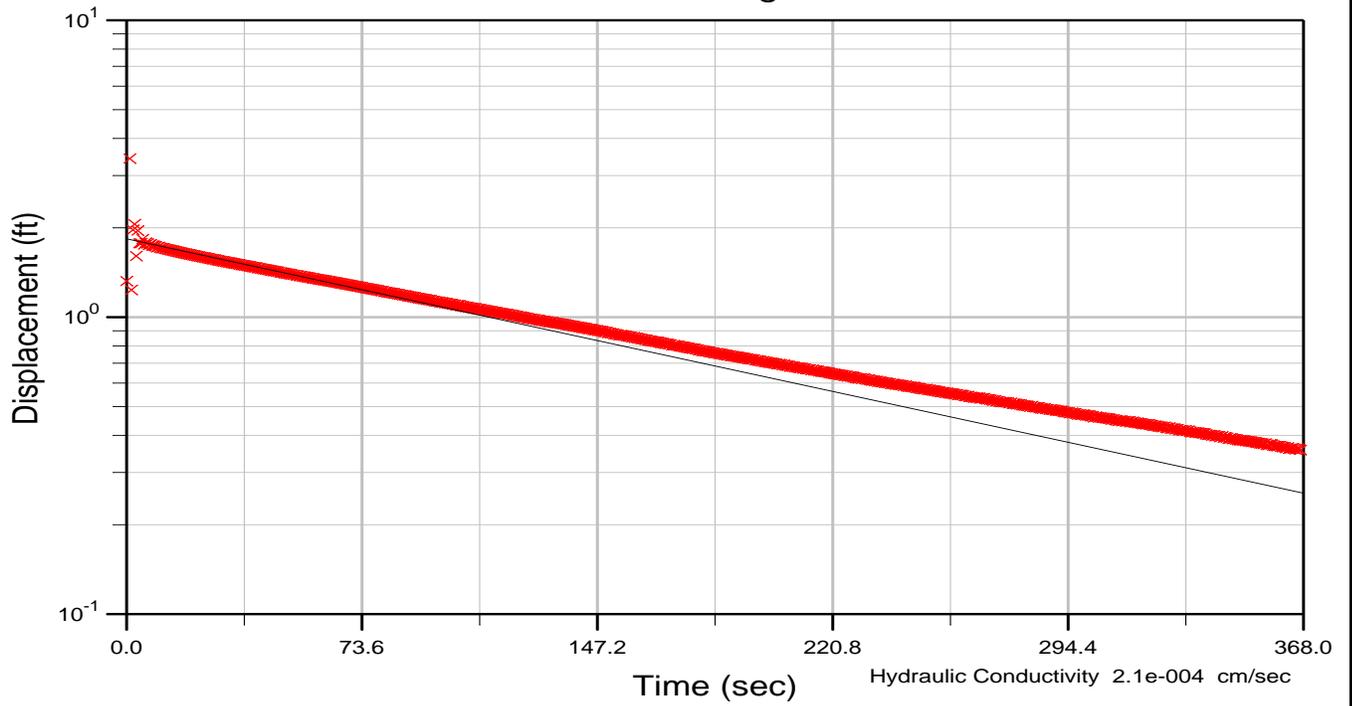
Figure

**B-3**

### DMW-3IA Falling Head #1



### DMW-3IA Rising Head #1



A:\G-12\11\14 L:\Project Notebook\1795401 Mercer Island Multi family\Slug-test Files\Slug Test

Note:  
Bouwer and Rice method was used for the slug test analysis.

Seattle DOT Dexter Parcel Site  
Seattle, Washington

#### DMW-3IA Representative Slug Test Results

19409-04

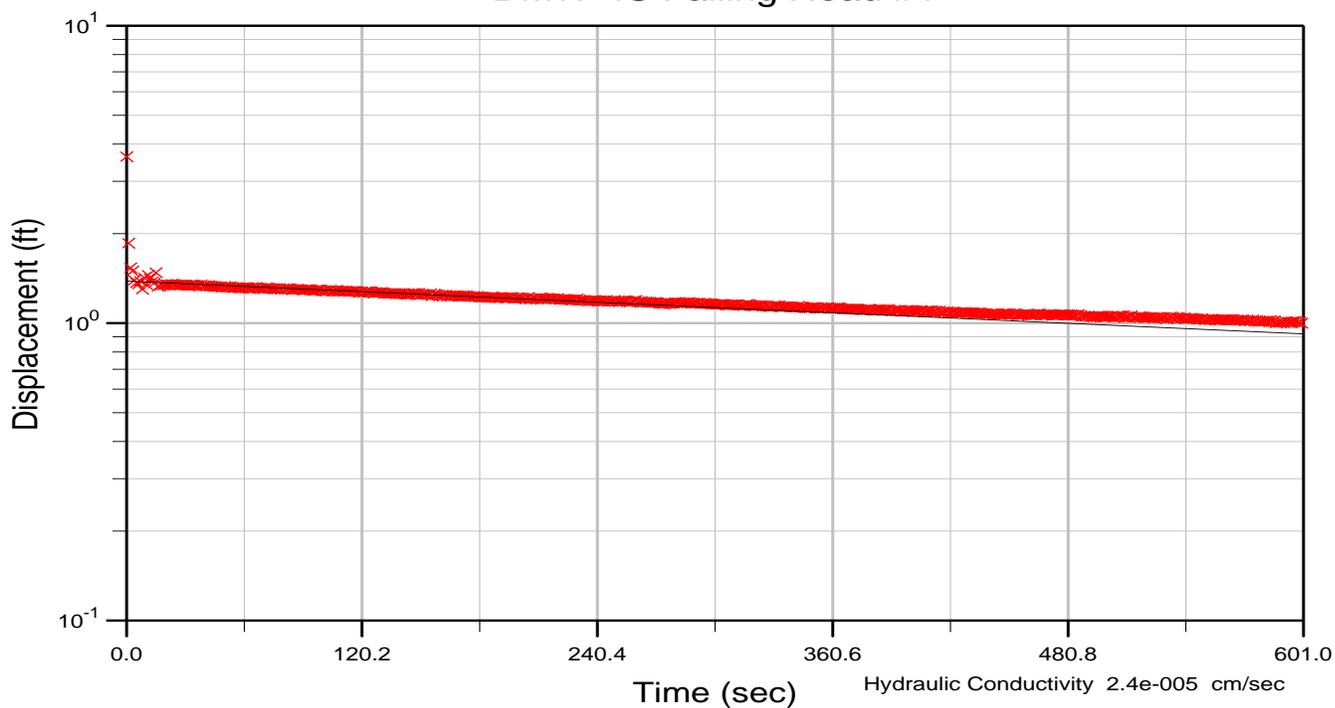
07/21



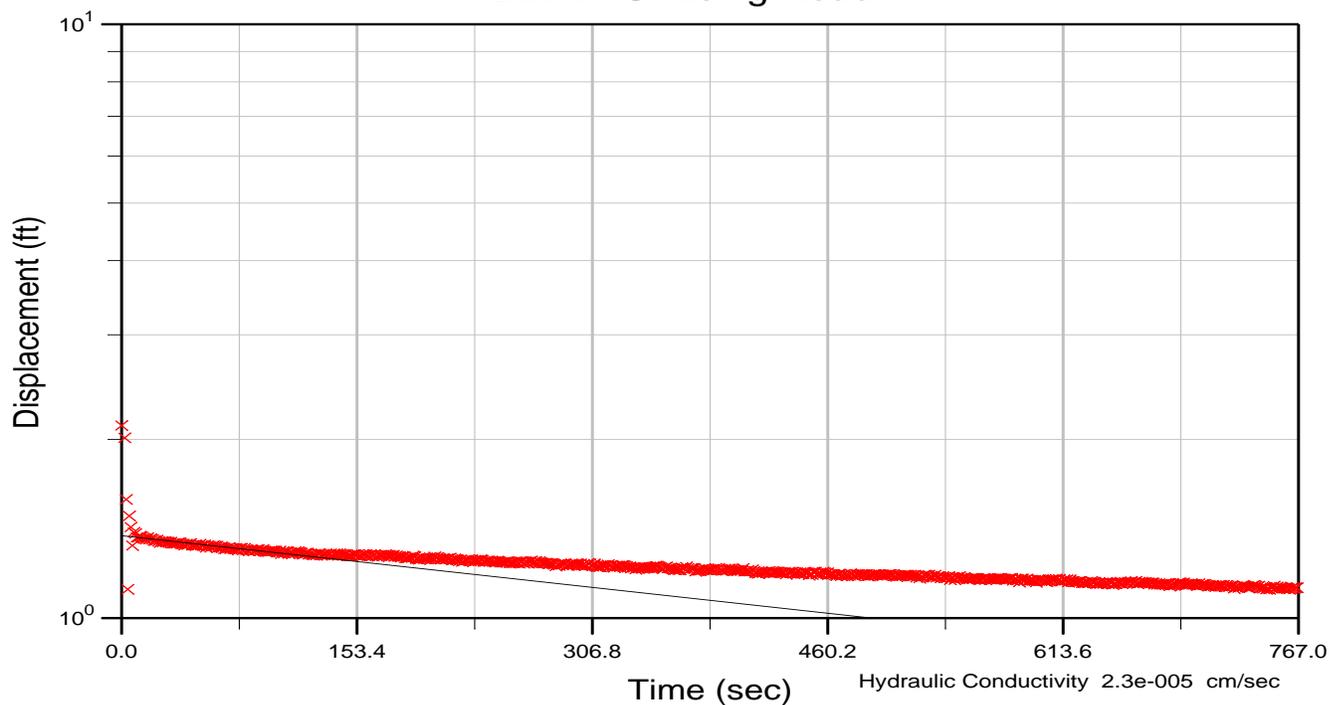
Figure

**B-4**

### DMW-4S Falling Head #1



### DMW-4S Rising Head #1



A:\G-12\11\14 L:\Project Notebook\1795401 Mercer Island Multi family\Slug-test Files\Slug Test

Note:  
Bouwer and Rice method was used for the slug test analysis.

Seattle DOT Dexter Parcel Site  
Seattle, Washington

#### DMW-4S Representative Slug Test Results

19409-04

07/21

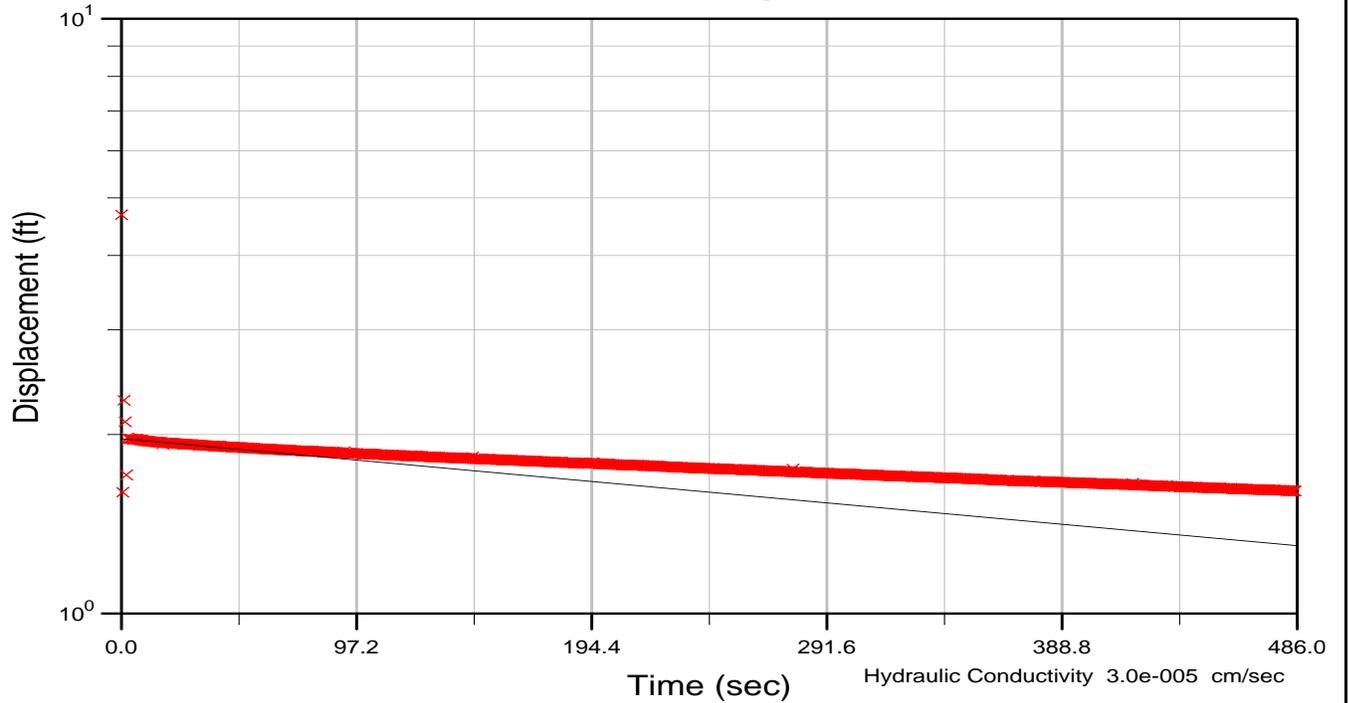


Figure

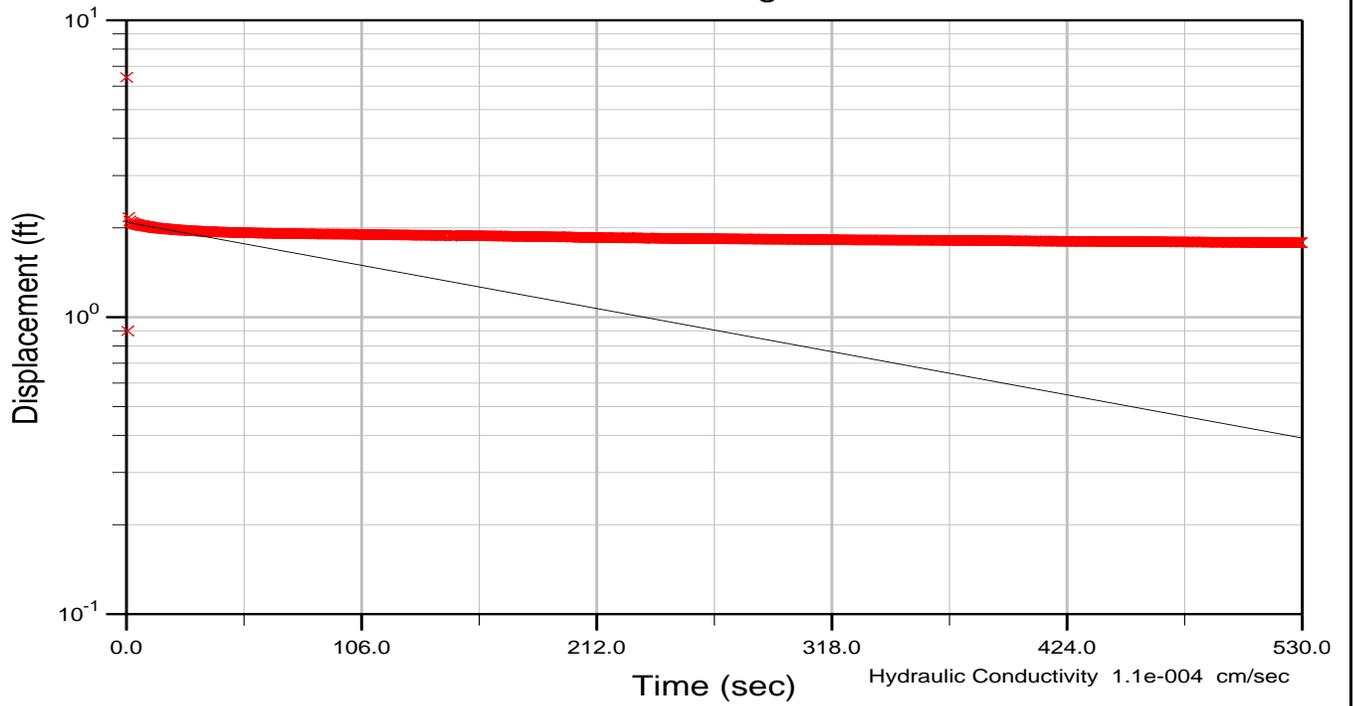
**B-5**

AUG 12/11/14 L:\Project Notebook\1795401 Mercer Island Multi family\Slug-test Files\Slug Test

### DMW-5IA Falling Head #1



### DMW-5IA Rising Head #1



Note:  
Bouwer and Rice method was used for the slug test analysis.

Seattle DOT Dexter Parcel Site  
Seattle, Washington

#### DMW-5IA Representative Slug Test Results

19409-04

07/21



Figure

**B-6**

**APPENDIX C1**  
**Laboratory Reports and Data Validation Summaries**  
**(2019-2020 Investigations)**

# LABORATORY REPORTS AND DATA VALIDATION SUMMARIES (2019-2020 INVESTIGATION)

## Data Validation Summaries

Soil, grab groundwater, and monitoring well groundwater samples were collected between March 4 and March 22, 2019, February 26 and March 19, 2020, and October 15 and November 3, 2020. The soil and water samples collected in 2019 were submitted to Advanced Analytical Laboratory (AAL) of Redmond, Washington, for chemical analysis of organic and conventional parameters. Soil and groundwater samples collected in 2019 were submitted to OnSite Environmental Inc. (OnSite) of Redmond, Washington, for chemical analysis of metals. Soil and groundwater samples collected in 2020 were submitted to Friedman & Bruya, Inc. (F&BI) of Seattle, Washington, for chemical analysis.

AAL reported results as Job Numbers C90305-1, C90306-4, C90307-1, C90309-3, C90309-4, C90314-1, and C90325-3. OnSite reported results as Laboratory Reference Numbers 1903-059, 1903-061, 1903-061B, 1903-097, 1903-097B, 1903-098, 1903-137, 1903-148, and 1903-216. F&BI reported results as Reference Numbers 002417, 002445, 002468, 003022, 003307, 003357, 010245, 010327, 010353, 010424, 010451, 010490, 010517, 011019, and 011044.

Soil samples were analyzed for one or more of the following:

- Total petroleum hydrocarbons as diesel- and lube-oil-range organics (DRO and HO, respectively) by Washington State Department of Ecology (Ecology) Method NWTPH-Dx
- Total petroleum hydrocarbons as gasoline-range organics (GRO) by Ecology Method NWTPH-Gx
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D-SIM
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A
- Volatile organic compounds (VOCs) by EPA Method 8260D/8260B/8021B
- Total metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and/or silver) by EPA Method 6010D/6020B
- Total mercury by EPA Method 7471B
- Total solids by Standard Method (SM) 2540B

Water samples were analyzed for one or more of the following:

- DRO and HO by Ecology Method NWTPH-Dx
- GRO by Ecology Method NWTPH-Gx
- PAHs by EPA Method 8270D-SIM
- VOCs by EPA Method 8260D/8260B/8021B
- Total and dissolved metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and/or silver) by EPA Method 200.8/6020B
- Total and dissolved mercury by EPA Method 7470A
- Total suspended solids (TSS) by SM 2540D

The laboratories performed ongoing quality assurance/quality control (QA/QC) reviews. Hart Crowser reviewed summary reports to check that they met data quality objectives for the project.

The following criteria were evaluated during the standard data quality review process:

- Holding times
- Reporting limits
- Method blanks
- Trip blanks
- Surrogate recoveries
- Laboratory and field duplicate relative percent differences (RPDs)
- Spike blank/spike blank duplicate (SB/SBD) recoveries and RPDs
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries and RPDs
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and RPDs.

The data were determined to be acceptable for use with qualifications. The complete laboratory reports are presented at the end of this appendix. The data review is summarized below.

## Reporting Limits

Reporting limits are set by the laboratories and are based on instrumentation abilities, sample matrix, and suggested reporting limits by EPA or Ecology. In some cases, the reporting limit is raised because of high analyte concentrations in the samples or matrix interferences. When sample results are between the method detection limit (MDL) and the reporting limit the laboratories flagged the result with a “J.” This J flag was changed to a T to match Environmental Information Management (EIM) database requirements.

## Sample Receiving Discrepancies

**1903-061 and 1903-061B.** The chain-of-custody (COC) was inaccurate: the incorrect number of sample containers was listed for sample DGW3-GW, and was corrected at the laboratory.

On April 2, 2019, the laboratory was contacted and dissolved metals analyses were requested on the samples. The samples were filtered and preserved at the laboratory. Dissolved metals analyses were reported in 1903-061B.

**1903-097 and 1903-097B.** On April 2, 2019, the laboratory was contacted and dissolved metals analyses were requested on the samples. The samples were filtered and preserved at the laboratory. Dissolved metals analyses were reported in 1903-097B.

**1903-098.** The COC was incomplete: the sampling time was not reported for the samples, and the sampling date was not reported for three samples. The COC was inaccurate; the following samples were incorrectly identified on the COC:

Incorrect Sample Name on COC	Correct Sample Name
DDP1-10	DPP1-10
DDP1-20	DPP1-20
DDP3-10	DPP3-10
DDP3-25	DPP3-25

The sample names were corrected on the tables in the investigation report.

**1903-137.** The COC was incomplete: the sampling time was not reported for thirteen samples; and two samples were crossed off the COC, but not initialed and dated.

**1903-148.** The COC was incomplete: one sample was crossed off the COC, but not initialed and dated.

**C90306-4.** The COC was incomplete: the sampling dates, times, and number of sample containers were not provided; two samples were crossed off the COC, but not initialed and dated; and the first page of the COC did not include all Relinquished by information. The COC was inaccurate: sample containers for NWTPH-Dx analysis were not included in the sample cooler, and the laboratory crossed the requested analyses off the COC. Nineteen samples were placed on hold and not analyzed, though the COC was not updated to reflect that.

**C90309-3.** The COC was inaccurate: the following samples were incorrectly identified on the COC:

Incorrect Sample Name on COC	Correct Sample Name
DGW2	DGW2-GW

The sample names were corrected on the tables in the investigation report.

**C90309-4.** The COC was incomplete: sampling times for 39 samples were not provided; sampling dates for four samples were not provided; and the number of sampling containers were not provided. The COC was inaccurate: samples DGW2-5, DGW2-10, DPP5-20, and DPP4-17.5 were crossed off by the laboratory as they were not included in the sample cooler; samples DGW4-5, DGW4-15, DGW4-20, DGW4-35, and DGW4-50 were listed twice, and duplicate entries were crossed off by the laboratory.

**C90314-1.** The COC was incomplete: sampling times for seventeen samples were not provided; and the number of sampling containers were not provided. The COC was inaccurate: samples DGW2-2.5 and DGW3-12.5 were listed twice, and duplicate entries were crossed off by the laboratory.

As sample quality was not affected by these discrepancies, analytical results were not qualified.

## **Soil Results**

### ***DRO and HO by NWTPH-Dx***

Reporting limits were acceptable. No method blank contamination was detected. Surrogate and SB recoveries were within laboratory control limits. MS/MSD recoveries and RPDs were within laboratory control limits. The laboratory duplicate RPDs were not applicable as the sample and/or duplicate concentrations were less than five times the reporting limit.

Holding times were acceptable with the following exceptions:

- Samples DGW2-5 and DGW2-10 were extracted past the 14-day method recommended holding time. The sample results were qualified as estimated (J).

### ***GRO by NWTPH-Gx***

Holding times and reporting limits were acceptable. No method blank contamination was detected. SB recoveries were within laboratory control limits. The laboratory duplicate RPDs were either within laboratory control limits or were not applicable when the sample and/or duplicate results were less than five times the reporting limit.

Surrogate recoveries were within laboratory control limits with the following exceptions:

- Sample DMW1S-12.5: The recovery for bromofluorobenzene was not reported due to coelution with sample peaks. High concentrations of gasoline were present in the sample. As the recovery for trifluorotoluene was within laboratory control limits, sample results were not qualified.

### ***PAHs by EPA 8270E-SIM***

Holding times and reporting limits were acceptable. No method blank contamination was detected. LCS, SB, and surrogate recoveries were within laboratory control limits. MS/MSD recoveries and RPDs were within laboratory control limits.

### ***PCBs by EPA 8082A***

Holding times and reporting limits were acceptable. No method blank contamination was detected. MS/MSD recoveries and RPDs were within laboratory control limits. LCS and surrogate recoveries were within laboratory control limits.

### ***VOCs by EPA 8260D/8260B/8021B***

Holding times were acceptable. No method blank contamination was detected. MS/MSD recoveries and RPDs were within laboratory control limits. LCS and SB recoveries were within laboratory control limits. The laboratory duplicate RPDs were within laboratory control limits or were not applicable as the sample and/or duplicate results were less than five times the reporting limit.

Reporting limits were acceptable with the following exceptions:

- Samples DMW-4S-5, DMW-4S-10, DMW-4S-15, DMW-4S-20, DMW-4S-25, DMW-4S-30, DMW-3IA-5, DMW-3IA-10, DMW-3IA-15, DMW-3IA-20, DMW-3IA-25, DMW-5IA-5, DMW-5IA-10, DMW-5IA-15, DMW-5IA-20, DMW-5IA-25, DMW-2S-10, DMW-2S-15, DMW-2S-20, and DMW-2S-25: The analyte concentrations reported for methylene chloride are reported below the lowest calibration standard. The methylene chloride results in these samples were qualified as estimated (J).

Calibration criteria were acceptable with the following exceptions:

- Samples DMW-3IA-5, DMW-3IA-10, DMW-3IA-15, DMW-3IA-20, DMW-3IA-25, DMW-5IA-5, DMW-5IA-10, DMW-5IA-15, DMW-5IA-20, DMW-5IA-25, DMW-2S-05, DMW-2S-10, DMW-2S-15, DMW-2S-20, and DMW-2S-25: The calibration results for hexachlorobutadiene were outside of the acceptance criteria. The hexachlorobutadiene results in these samples were qualified as estimated (J).

Surrogate recoveries were within control limits with the following exceptions:

- Sample DMW1S-12.5: The recovery for 4-BFB was not reported due to coelution with sample peaks. High concentrations of target analytes were present in the sample. As the recoveries for the remaining surrogates were within laboratory control limits, sample results were not qualified.

The laboratory noted the presence of methylene chloride in DMW-2S-05 is likely due to laboratory contamination, as methylene chloride is a common lab reagent and otherwise breaks down quickly in the environment. The value reported is qualified as non-detect (U) at the detected concentration.

The laboratory noted that 1,2,4-trimethylbenzene in DMW-2S-10 exceeded the valid instrument calibration range. The value reported was qualified as estimated (J).

### ***Total Metals by EPA 6010D/6020B***

Holding times and reporting limits were acceptable. No method blank contamination was detected. MS/MSD recoveries and RPDs were within laboratory control limits. SB recoveries were within laboratory control limits. The laboratory duplicate RPDs were either within laboratory control limits or were not applicable when sample and/or duplicate concentrations were less than five times the reporting limit.

### ***Total Mercury by EPA 7471B***

Holding times and reporting limits were acceptable. No method blank contamination was detected. SB recoveries were within control limits. MS/MSD recoveries and RPDs were within control limits. The laboratory duplicate RPDs were not applicable as the sample and/or duplicate concentrations were less than five times the reporting limit.

### ***Total Solids by SM 2540B***

Reporting limits were acceptable.

Holding times were acceptable with the following exceptions:

- Samples DGW2-10, DGW2-5, DGW4-5, DGW4-10, DGW4-15, DGW4-20, DGW4-35, DGW4-50, DPP1-7.5, DPP1-20, DPP3-5, DPP3-15, DPP3-30, DMW1S-5, DMW1S-10, DMW1S-12.5, DMW1S-15, DMW1S-20, DGW1-10, DGW1-12.5, DGW1-15, DGW1-25, DGW1-30, DGW3-2.5, DGW3-12.5, DGW3-15, DGW3-20, DGW3-25, DGW2-25, DGW2-30, DPP2-5, and DPP2-10 were prepared after the applicable 14 day holding time for dry weight corrections and qualified as estimated (J).

## Water Results

### ***GRO by NWTPH-Gx***

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate recoveries were within laboratory control limits. SB recoveries were within laboratory control limits. The laboratory and field duplicate RPDs were either within laboratory control limits or were not applicable when the sample and/or duplicate results were less than five times the reporting limit.

### ***DRO and HO by NWTPH-Dx***

Holding times and reporting limits were acceptable. No method blank contamination was detected. Surrogate and SB recoveries were within laboratory control limits. The laboratory and field duplicate RPDs were not applicable as the sample and/or duplicate results were less than five times the reporting limit.

The laboratory noted the chromatographic pattern in DRO analysis for samples DMW-1S (F&BI 003307), DMW-4S, DMW-10S, and DMW-11S does not resemble the fuel standard used for quantitation. The chromatograms for these samples did not match the diesel fuel standard, but do appear to be DRO, possibly a kerosene-like product. The DRO results in these samples were not qualified.

The laboratory noted the chromatographic pattern in DRO analysis for sample DMW-5IA (F&BI 003357 and 010245) does not resemble the fuel standard used for quantitation. The laboratory case narrative noted the reported DRO concentration was due to a pattern of individual peaks inconsistent with a standard diesel fuel pattern. Based on the case narrative and our interpretation of the chromatograms, the DRO values reported are flagged as non-detect (U) at the detected concentrations.

### ***PAHs by EPA 8270D-SIM***

Holding times and reporting limits were acceptable. No method blank contamination was detected. SB, LCS, and surrogate recoveries were within laboratory control limits. MS/MSD recoveries and RPDs were within laboratory control limits.

### ***VOCs by EPA 8260D/8260B/8021B***

Holding times were acceptable. No method blank or trip blank contamination was detected. LCS, SB, and surrogate recoveries were within laboratory control limits. MS/MSD recoveries and RPDs were within laboratory control limits. The field duplicate RPDs were either within laboratory control limits or were not applicable when the sample and/or duplicate results were less than five times the reporting limit.

Reporting limits were acceptable with the following exceptions:

- Samples DMW-1S (F&BI 003307), DMW-2S, DMW-200S, DMW-3IA, DMW-4S, DMW-5IA, and DMW-6: The concentrations of trichlorofluoromethane, 1,2,3-trichloropropane, and 1,2-dibromo-3-chloropropane were reported below the lowest calibration standard. The values reported are qualified as estimated (J).
- Samples DMW-4S and DMW-5IA: The concentrations of chloroethane were reported below the lowest calibration standard. The values reported are qualified as estimated (J).

### ***Total and Dissolved Metals by EPA 200.8/6020B***

Holding times and reporting limits were acceptable. No method blank contamination was detected. SB recoveries were within method control limits. MS/MSD recoveries and RPDs were within method control limits. The laboratory and field duplicate RPDs were either within laboratory control limits or were not applicable when the sample and/or duplicate results were less than five times the reporting limit.

### ***Total and Dissolved Mercury by EPA 7470A***

Reporting limits were acceptable. No method blank contamination was detected. SB recoveries were within control limits. MS/MSD recoveries and RPDs were within control limits. The laboratory duplicate RPDs were not applicable as the sample and/or duplicate results were less than five times the reporting limit.

Holding times were acceptable with the following exceptions:

- Samples DGW2-GW, DGW4-GW, DGW1-GW, DPP3-GW, and DGW3-GW were prepared and analyzed for dissolved mercury past the 28-day method recommended holding time. The sample results for dissolved mercury were qualified as estimated (J).

### ***TSS by SM 2540D***

Holding times and reporting limits were acceptable. No method blank contamination was detected. SB and MS recoveries were within method control limits.

April 23, 2019

*Julie Wukelic  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Ms. Wukelic:

Please find enclosed the analytical data report for the *6091 Dexter 19D1155070 (C90411-3)* Project.

Samples were received on *April 11, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

---

4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*

# Sample Custody Record



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB <u>19D1155070</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS							
PROJECT NAME <u>601 Dexter</u>						TPH-GX	TPH-DX	VOCs	TOTAL METALS	PAHS	PCBS	TPH-GX/STX	T.S.S.											
HART CROWSER CONTACT _____																								
SAMPLED BY: <u>M. Fong</u>																								
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																		PID reading (ppm)	Sheentest
	HC-1-5	S-1	4/3/19	0935	soil	<del>XXXX</del>	<del>XXXX</del>															3	20	SS
	HC-1-7.5	S-2		0948		<del>XXXX</del>	<del>XXXX</del>		X														9.4	SS
	HC-1-10	S-3		0957		<del>XXXX</del>	<del>XXXX</del>		X														15	SS
	HC-1-12.5	S-4		1005		<del>XXXX</del>	<del>XXXX</del>	X															140	SS
	HC-1-15	S-5		1008		<del>XXXX</del>	<del>XXXX</del>	X															64.4	SS
	HC-1-17.5	S-6		1026		<del>XXXX</del>	<del>XXXX</del>	X															89.7	SS
	HC-1-20	S-7		1034		<del>XXXX</del>	<del>XXXX</del>	X	X														275	NS
	HC-1-25	S-8		1048		<del>XXXX</del>	<del>XXXX</del>	X															900	SS
	HC-1-30	S-9		1104		<del>XXXX</del>	<del>XXXX</del>	X		X													485	SS
	HC-1-TM	S-10	4/3/19	1400	water	<del>XXXX</del>	<del>XXXX</del>	X														8	water found at 25ft. bgs	

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS: <b>METALS - MTCAS</b> <b>WATER METALS DISSOLVED &amp; TOTAL MTCAS</b>	TOTAL NUMBER OF CONTAINERS
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME	COMPANY	PRINT NAME	COMPANY		
RELINQUISHED BY	DATE	RECEIVED BY	DATE		
SIGNATURE	TIME	SIGNATURE	TIME	COOLER NO.:	STORAGE LOCATION:
PRINT NAME	COMPANY	PRINT NAME	COMPANY	See Lab Work Order No. _____	for Other Contract Requirements

SAMPLE RECEIPT INFORMATION	
CUSTODY SEALS:	
<input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> N/A
GOOD CONDITION	
<input type="checkbox"/> YES	<input type="checkbox"/> NO
TEMPERATURE _____	
SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT	
TURNAROUND TIME:	
<input type="checkbox"/> 24 HOURS	<input type="checkbox"/> 1 WEEK
<input type="checkbox"/> 48 HOURS	<input type="checkbox"/> STANDARD
<input type="checkbox"/> 72 HOURS	OTHER _____

# Sample Custody Record



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB AD115507019449-00 LAB NUMBER \_\_\_\_\_

PROJECT NAME GOI Dexter

HART CROWSER CONTACT WUKELIC

SAMPLED BY: M. Fong

REQUESTED ANALYSIS: TPH-6X, TPH-DX, VOCs, Total Metals, PAHS, PCBs

NO. OF CONTAINERS: \_\_\_\_\_

OBSERVATIONS/COMMENTS/COMPOSITING INSTRUCTIONS: \_\_\_\_\_

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-6X	TPH-DX	VOCs	Total Metals	PAHS	PCBS	NO. OF CONTAINERS	PID reading / Sheen test
1	HC-5-5	S-1	4/3/14	1305	soil							3	0.0 / SS
2	HC-5-75	S-2		1323								↓	0.0 / SS
3	HC-5-10	S-3		1335		<del>XXXX</del>						↓	0.0 / SS
4	HC-5-12.5	S-4		1415								↓	0.0 / NS
5	HC-5-15	S-5	↓	1435	↓	XXXXXX						↓	0.0 / SS
6	HC-2-25	S-1		1520								↓	0.0 / SS
7	HC-2-5	S-2		1525		X						↓	0.0 / <del>SS</del> SS
8	HC-2-7.5	S-3		1545								↓	0.0 / NS
9	HC-2-10	S-4		1602		XXX						↓	0.0 / SS
10	HC-2-12.5	S-5		1609								↓	0.0 / <del>SS</del> SS
11	HC-2-15	S-6	↓	1619	↓	<del>XX</del>	X					↓	0.0 / <del>SS</del> NS

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
	4/11/14				
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME	1240	PRINT NAME			
COMPANY		COMPANY		COOLER NO.: _____ STORAGE LOCATION: _____	TURNAROUND TIME:
RELINQUISHED BY	DATE	RECEIVED BY	DATE		
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY		See Lab Work Order No. _____	OTHER _____

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

SAMPLE RECEIPT INFORMATION

CUSTODY SEALS:  YES  NO  N/A

GOOD CONDITION:  YES  NO

TEMPERATURE: \_\_\_\_\_

SHIPMENT METHOD:  HAND  COURIER  OVERNIGHT

TURNAROUND TIME:  24 HOURS  48 HOURS  72 HOURS  1 WEEK  STANDARD





# Sample Custody Record



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB <u>19D1155070</u> LAB NUMBER _____ PROJECT NAME <u>COI Dexter</u> HART CROWSER CONTACT _____ SAMPLED BY: <u>M. Fong</u>						REQUESTED ANALYSIS												NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
						TPH-GX	TPH-DX	VOCs	Total Metals	PAHs	PCBs											
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															PID	Screen Test	
	MW-1-5	S-1	4/4/19	1035	Soil	<del>XXX</del>														3	0.0	SS
	MW-1-7.5	S-2		1052																1		SS
	MW-1-10	S-3		1102		XXX	XXX													3		SS
	MW-1-12.5	S-4		1125																1		SS
	MW-1-15	S-5		1130																3		SS
	MW-1-20	S-6		1150																3		SS
	MW-1-25	S-7		1158		XXX	X													3		SS
	MW-1-30	S-8	∇	1210	∇	<del>XXX</del>	X													3	∇	SS
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:												TOTAL NUMBER OF CONTAINERS				
SIGNATURE		TIME	SIGNATURE		TIME													SAMPLE RECEIPT INFORMATION				
PRINT NAME		TIME	PRINT NAME		TIME													CUSTODY SEALS:				
COMPANY		TIME	COMPANY		TIME													<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT				
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.:				STORAGE LOCATION:				TURNAROUND TIME:								
SIGNATURE		TIME	SIGNATURE		TIME	See Lab Work Order No. _____ for Other Contract Requirements				<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____												
PRINT NAME		TIME	PRINT NAME		TIME																	
COMPANY		TIME	COMPANY		TIME																	

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record



C90411-3

①

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB <u>1917153070</u> LAB NUMBER _____	REQUESTED ANALYSIS TPH-GX TPH-DX VOCs TOTAL METALS PAHS PCBs TPH-GX/SIX TSS Lead	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>601 Denver</u>			
HART CROWSER CONTACT _____			
SAMPLED BY: <u>M. Fong</u>			

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-GX	TPH-DX	VOCs	TOTAL METALS	PAHS	PCBs	TPH-GX/SIX	TSS	Lead	NO. OF CONTAINERS	PID reading (ppm)	Sheentest
	HC-1-5	S-1	4/3/19	0935	soil	X	X	X	X	X	X	X	X	X	3	20	SS
	HC-1-7.5	S-2		0948		X	X	X	X	X	X	X	X	X		9.4	SS
	HC-1-10	S-3		0957		X	X	X	X	X	X	X	X	X		15	SS
	HC-1-12.5	S-4		1005		X	X	X	X	X	X	X	X	X		140	SS
	HC-1-15	S-5		1008		X	X	X	X	X	X	X	X	X		64.4	SS
	HC-1-17.5	S-6		1026		X	X	X	X	X	X	X	X	X		39.7	SS
	HC-1-20	S-7		1034		X	X	X	X	X	X	X	X	X		275	NS
	HC-1-25	S-8		1048		X	X	X	X	X	X	X	X	X		900	SS
	HC-1-30	S-9		1104		X	X	X	X	X	X	X	X	X		485	SS
	HC-(LIM)	S-10	4/3/19	1400	water	X	X	X	X	X	X	X	X	X	8		

water found at 25 ft. below  
 ⊗ Added by M. Goodman  
 04/22/19 ✓ VFE

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS: METALS - MTC S WATER METALS DISSOLVED & TOTAL MTC S	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>M. Fong</u>	TIME 1240	SIGNATURE <u>V. Ivanov</u>	TIME 04/18/19		SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:	STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME	TURNAROUND TIME:	
PRINT NAME		PRINT NAME		<input type="checkbox"/> 24 HOURS	<input type="checkbox"/> 1 WEEK
COMPANY		COMPANY		<input type="checkbox"/> 48 HOURS	<input type="checkbox"/> STANDARD
				<input type="checkbox"/> 72 HOURS	OTHER _____

See Lab Work Order No. \_\_\_\_\_  
for Other Contract Requirements

# Sample Custody Record

Samples Shipped to: \_\_\_\_\_

**HART CROWSER**

C90411-3 (2)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

NO. <del>19449-00</del> LAB NUMBER PROJECT NAME <u>601 Dexter</u> HART CROWSER CONTACT <u>WUKELIC</u> SAMPLED BY: <u>R. King</u>						REQUESTED ANALYSIS TPH-GX TPH-DX VOCs Total Metals PAHS PCBs						NO. OF CONTAINERS OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX								PID reading / Sheen test		
1	HC-5-5	S-1	4/3/19	1305	soil							3 0.0 / SS			
2	HC-5-7.5	S-2		1323								0.0 / SS			
3	HC-5-10	S-3		1335		<del>XXXX</del>						0.0 / SS			
4	HC-5-12.5	S-4		1415								0.0 / NS			
5	HC-5-15	S-5		1435		XXXX						0.0 / SS			
6	HC-2-7.5	S-1		1520								0.0 / SS			
7	HC-2-5	S-2		1525		X						0.0 / <del>SS</del> SS			
8	HC-2-7.5	S-3		1545								0.0 / NS			
9	HC-2-10	S-4		1602		XXX						0.0 / SS			
10	HC-2-12.5	S-5		1609								0.0 / <del>SS</del> SS			
11	HC-2-15	S-6		1619		<del>XX</del> X						0.0 / <del>SS</del> NS			
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:				TOTAL NUMBER OF CONTAINERS					
SIGNATURE		TIME	SIGNATURE		TIME					SAMPLE RECEIPT INFORMATION					
PRINT NAME		TIME	PRINT NAME		TIME					CUSTODY SEALS:			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A		
COMPANY		TIME	COMPANY		TIME					GOOD CONDITION:			<input type="checkbox"/> YES <input type="checkbox"/> NO		
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.:				SHIPMENT METHOD					
SIGNATURE		TIME	SIGNATURE		TIME	STORAGE LOCATION:				<input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT					
PRINT NAME		TIME	PRINT NAME		TIME	See Lab Work Order No. _____				TURNAROUND TIME:					
COMPANY		TIME	COMPANY		TIME	for Other Contract Requirements				<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____					

White to Lab    Yellow to Project Manager    Pink to Sample Custodian



# Sample Custody Record



C90411-3 (4)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB <u>140-58070</u> LAB NUMBER _____	REQUESTED ANALYSIS	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>601 Dexter</u>	<u>TPH-6X</u> <u>TPH-DX</u> <u>VOLCS</u> <u>Total Metals</u> <u>PATHS</u> <u>P(Bs)</u>		
HART CROWSER CONTACT _____			
SAMPLED BY: <u>M. Fung</u>			

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-6X	TPH-DX	VOLCS	Total Metals	PATHS	P(Bs)	NO. OF CONTAINERS	PID (ppm)	Shren Test
	HC-3-5	S-1	4/4/19	0820	Soil							3	0.0	SS
	HC-3-75	S-2		0830		X	X	X				1		SS
	HC-3-10	S-3		0835								3		NS
	HC-3-17.5	S-4		0845						X	X	1		NS
	HC-3-15	S-5		0855	▽			X	X	X		3		SS
	HC-3-20	S-6		0910				X				3		NS
	HC-3-25	S-7		0925								3		SS
	HC-3-30	S-8	▽	0944	▽	X	X	X	X	X		3	▽	SS

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>Matthew Fung</u> SIGNATURE	<u>4/4/19</u> TIME	<u>V. Ivanov</u> SIGNATURE	<u>04/18/19</u> TIME		SAMPLE RECEIPT INFORMATION
<u>Matthew Fung</u> PRINT NAME		<u>VAL IVANOV</u> PRINT NAME		COOLER NO.:	STORAGE LOCATION:
<u>Hart Crowser</u> COMPANY	<u>1240</u>	<u>ACL</u> COMPANY			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	TURNAROUND TIME:	
SIGNATURE	TIME	SIGNATURE	TIME	<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK	
PRINT NAME		PRINT NAME		<input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD	
COMPANY		COMPANY		<input type="checkbox"/> 72 HOURS    OTHER _____	

White to Lab    Yellow to Project Manager    Pink to Sample Custodian



AAL Job Number: C90411-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19D1155070  
Date received: 04/11/19

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		MS		MSD		RPD	
8260B, µg/L	MTH BLK	LCS	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Lim	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19
MTBE	5.0	nd	nd	nd			
Chloromethane	1.0	nd	nd	nd			
Vinyl chloride(*)	0.2	nd	nd	nd			
Bromomethane	1.0	nd	nd	nd			
Chloroethane	1.0	nd	nd	nd			
Trichlorofluoromethane	1.0	nd	nd	nd			
1,1-Dichloroethene	1.0	nd	nd	nd			
Methylene chloride	1.0	nd	nd	nd			
trans-1,2-Dichloroethene	1.0	nd	nd	nd			
1,1-Dichloroethane	1.0	nd	nd	nd			
2,2-Dichloropropane	1.0	nd	nd	nd			
cis-1,2-Dichloroethene	1.0	nd	nd	nd			
Chloroform	1.0	nd	nd	nd			
1,1,1-Trichloroethane	1.0	nd	nd	nd			
Carbontetrachloride	1.0	nd	nd	nd			
1,1-Dichloropropene	1.0	nd	nd	nd			
Benzene	1.0	nd	77%	nd	80%	80%	0%
1,2-Dichloroethane(EDC)	1.0	nd	nd	nd			
Trichloroethene	1.0	nd	78%	nd	82%	84%	3%
1,2-Dichloropropane	1.0	nd	nd	nd			
Dibromomethane	1.0	nd	nd	nd			
Bromodichloromethane	1.0	nd	nd	nd			
cis-1,3-Dichloropropene	1.0	nd	nd	nd			
Toluene	1.0	nd	90%	nd	88%	94%	6%
trans-1,3-Dichloropropene	1.0	nd	nd	nd			
1,1,2-Trichloroethane	1.0	nd	nd	nd			
Tetrachloroethene	1.0	nd	nd	nd			
1,3-Dichloropropane	1.0	nd	nd	nd			
Dibromochloromethane	1.0	nd	nd	nd			
1,2-Dibromoethane (EDB)*	0.01	nd	nd	nd			
Chlorobenzene	1.0	nd	100%	nd	98%	105%	7%
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd			
Ethylbenzene	1.0	nd	nd	25			
Xylenes	1.0	nd	nd	11			
Styrene	1.0	nd	nd	nd			
Bromoform	1.0	nd	nd	nd			
Isopropylbenzene	1.0	nd	nd	37			
1,2,3-Trichloropropane	1.0	nd	nd	nd			
Bromobenzene	1.0	nd	nd	nd			
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd			
n-Propylbenzene	1.0	nd	nd	51			
2-Chlorotoluene	1.0	nd	nd	nd			
4-Chlorotoluene	1.0	nd	nd	nd			
1,3,5-Trimethylbenzene	1.0	nd	nd	81			
tert-Butylbenzene	1.0	nd	nd	1.1			
1,2,4-Trimethylbenzene	1.0	nd	nd	150			
sec-Butylbenzene	1.0	nd	nd	12			
1,3-Dichlorobenzene	1.0	nd	nd	nd			

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		MS		MSD		RPD	
8260B, µg/L	MTH BLK	LCS	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Lim	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19
Isopropyltoluene	1.0	nd		19			
1,4-Dichlorobenzene	1.0	nd		nd			
1,2-Dichlorobenzene	1.0	nd		nd			
n-Butylbenzene	1.0	nd		12			
1,2-Dibromo-3-Chloropropane	1.0	nd		nd			
1,2,4-Trichlorobenzene	1.0	nd		nd			
Hexachloro-1,3-butadiene	1.0	nd		nd			
Naphthalene	1.0	nd		nd			
1,2,3-Trichlorobenzene	1.0	nd		nd			

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	86%	88%	89%	88%
Toluene-d8	93%	79%	89%	89%	80%
1,2-Dichloroethane-d4	90%	98%	95%	95%	97%
4-Bromofluorobenzene	95%	95%	97%	97%	94%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19D1155070  
Date received: 04/11/19

Analytical Results		Dupl		
NWTPH-Dx, mg/L		MTH BLK	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water
Date extracted	Reporting	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19
Kerosene/Jet fuel	0.20	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd
Heavy oil	0.50	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	110%	112%	115%
o-Terphenyl	117%	115%	116%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
na - not analyzed  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl			RPD
NWTPH-Gx		MTH BLK	HC-1-TMW	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	04/11/19	04/11/19	04/11/19	04/11/19

**NWTPH-Gx, mg/L**

Mineral spirits/Stoddard	0.10	nd	nd	nd	
Gasoline	0.10	nd	6.9	7.0	1%

**Surrogate recoveries:**

Trifluorotoluene	125%	C	C
Bromofluorobenzene	120%	121%	125%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl		RPD		MS	
Metals Total (7010/747A), mg/L	MTH BLK	LCS	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	04/17/19	04/17/19	04/17/19	04/17/19	04/17/19	04/17/19
Date analyzed	Limits	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19
Lead (Pb)	0.002	nd	100%	0.006	0.007	15%	75%
Chromium (Cr)	0.01	nd	96%	nd	nd		92%
Cadmium (Cd)	0.005	nd	84%	nd	nd		92%
Arsenic (As)	0.005	nd	106%	nd	nd		115%
Mercury (Hg) (7470A)	0.0005	nd	118%	nd	nd		108%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl			MS	
Metals Dissolved (7010/747A), mg/L		MTH BLK	LCS	HC-1-TMW	HC-1-TMW	HC-1-TMW
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	04/17/19	04/17/19	04/17/19	04/17/19	04/17/19
Date analyzed	Limits	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19
Lead (Pb)	0.002	nd	100%	nd	nd	75%
Chromium (Cr)	0.01	nd	96%	nd	nd	92%
Cadmium (Cd)	0.005	nd	84%	nd	nd	92%
Arsenic (As)	0.005	nd	106%	nd	nd	115%
Mercury (Hg) (7470A)	0.0005	nd	118%	nd	nd	108%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19D1155070  
Date received: 04/11/19

Analytical Results

<b>TSS (160.2)</b>	<b>HC-1-TMW</b>	
Matrix	Water	Water
Date analyzed	Reporting Limits	04/16/19
<b>Total Suspended Solids, mg/L</b>	10	160

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MW-1-10	MW-1-25	MW-1-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19
Date analyzed	Limits	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19
MTBE	100	nd		nd		nd	nd	nd
Dichlorodifluoromethane	50	nd		nd		nd	nd	nd
Chloromethane	50	nd		nd		nd	nd	nd
Vinyl chloride	50	nd		nd		nd	nd	nd
Bromomethane	50	nd		nd		nd	nd	nd
Chloroethane	50	nd		nd		nd	nd	nd
Trichlorofluoromethane	50	nd		nd		nd	nd	nd
1,1-Dichloroethene	50	nd		nd		nd	nd	nd
Methylene chloride	20	nd		nd		nd	nd	nd
trans-1,2-Dichloroethene	50	nd		nd		nd	nd	nd
1,1-Dichloroethane	50	nd		nd		nd	nd	nd
2,2-Dichloropropane	50	nd		nd		nd	nd	nd
cis-1,2-Dichloroethene	50	nd		nd		nd	nd	nd
Chloroform	50	nd		nd		nd	nd	nd
1,1,1-Trichloroethane	50	nd		nd		nd	nd	nd
Carbontetrachloride	50	nd		nd		nd	nd	nd
1,1-Dichloropropene	50	nd		nd		nd	nd	nd
Benzene	20	nd	77%	nd	95%	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd		nd	nd	nd
Trichloroethene	20	nd	78%	nd	92%	nd	nd	nd
1,2-Dichloropropane	50	nd		nd		nd	nd	nd
Dibromomethane	50	nd		nd		nd	nd	nd
Bromodichloromethane	50	nd		nd		nd	nd	nd
cis-1,3-Dichloropropene	50	nd		nd		nd	nd	nd
Toluene	50	nd	90%	nd	104%	nd	nd	nd
trans-1,3-Dichloropropene	50	nd		nd		nd	nd	nd
1,1,2-Trichloroethane	50	nd		nd		nd	nd	nd
Tetrachloroethene	50	nd		nd		nd	nd	nd
1,3-Dichloropropane	50	nd		nd		nd	nd	nd
Dibromochloromethane	20	nd		nd		nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd		nd	nd	nd
Chlorobenzene	50	nd	100%	nd	109%	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd		nd	nd	nd
Ethylbenzene	50	nd		nd		nd	nd	nd
Xylenes	50	nd		nd		nd	nd	nd
Styrene	50	nd		nd		nd	nd	nd
Bromoform	50	nd		nd		nd	nd	nd
Isopropylbenzene	50	nd		nd		nd	nd	nd
1,2,3-Trichloropropane	50	nd		nd		nd	nd	nd
Bromobenzene	50	nd		nd		nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd		nd	nd	nd
n-Propylbenzene	50	nd		nd		nd	nd	nd
2-Chlorotoluene	50	nd		nd		nd	nd	nd
4-Chlorotoluene	50	nd		nd		nd	nd	nd
1,3,5-Trimethylbenzene	50	nd		nd		nd	nd	nd
tert-Butylbenzene	50	nd		nd		nd	nd	nd
1,2,4-Trimethylbenzene	50	nd		nd		nd	nd	nd

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MW-1-10	MW-1-25	MW-1-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19
Date analyzed	Limits	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19
sec-Butylbenzene	50	nd		nd		nd	nd	nd
1,3-Dichlorobenzene	50	nd		nd		nd	nd	nd
Isopropyltoluene	50	nd		nd		nd	nd	nd
1,4-Dichlorobenzene	50	nd		nd		nd	nd	nd
1,2-Dichlorobenzene	50	nd		nd		nd	nd	nd
n-Butylbenzene	50	nd		nd		nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd		nd	nd	nd
1,2,4-Trichlorobenzene	50	nd		nd		nd	nd	nd
Hexachloro-1,3-butadiene	50	nd		nd		nd	nd	nd
Naphthalene	50							
1,2,3-Trichlorobenzene	50	nd		nd		nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	86%	92%	93%	83%	89%	90%
Toluene-d8	93%	79%	104%	90%	88%	98%	94%
1,2-Dichloroethane-d4	90%	98%	98%	100%	99%	96%	94%
4-Bromofluorobenzene	95%	95%	95%	98%	96%	93%	93%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		HC-1-12.5	HC-1-17.5	HC-1-25	HC-1-30	HC-5-15	HC-2-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19	04/11/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19	04/11/19
MTBE	100	nd	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	840	220	nd	nd
Xylenes	50	nd	nd	620	190	nd	nd
Styrene	50	nd	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	660	130	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	1,400	320	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	1,900	430	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	2,800	970	nd	nd

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		HC-1-12.5	HC-1-17.5	HC-1-25	HC-1-30	HC-5-15	HC-2-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19	04/11/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19	04/11/19
sec-Butylbenzene	50	nd	nd	660	100	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	1,000	160	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	1,000	170	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd	nd
Naphthalene	50		nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	86%	90%	88%	84%	83%	86%
Toluene-d8	90%	99%	90%	87%	89%	89%
1,2-Dichloroethane-d4	95%	97%	96%	97%	95%	98%
4-Bromofluorobenzene	102%	104%	129%	106%	100%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		HC-2-15	HC-4-15	HC-4-35	HC-3-7.5	HC-3-15	HC-3-20	HC-3-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/12/19
Date analyzed	Limits	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/12/19
MTBE	100	nd						
Dichlorodifluoromethane	50	nd						
Chloromethane	50	nd						
Vinyl chloride	50	nd						
Bromomethane	50	nd						
Chloroethane	50	nd						
Trichlorofluoromethane	50	nd						
1,1-Dichloroethene	50	nd						
Methylene chloride	20	nd						
trans-1,2-Dichloroethene	50	nd						
1,1-Dichloroethane	50	nd						
2,2-Dichloropropane	50	nd						
cis-1,2-Dichloroethene	50	nd						
Chloroform	50	nd						
1,1,1-Trichloroethane	50	nd						
Carbontetrachloride	50	nd						
1,1-Dichloropropene	50	nd						
Benzene	20	nd						
1,2-Dichloroethane(EDC)	20	nd						
Trichloroethene	20	nd						
1,2-Dichloropropane	50	nd						
Dibromomethane	50	nd						
Bromodichloromethane	50	nd						
cis-1,3-Dichloropropene	50	nd						
Toluene	50	nd						
trans-1,3-Dichloropropene	50	nd						
1,1,2-Trichloroethane	50	nd						
Tetrachloroethene	50	nd						
1,3-Dichloropropane	50	nd						
Dibromochloromethane	20	nd						
1,2-Dibromoethane (EDB)*	5	nd						
Chlorobenzene	50	nd						
1,1,1,2-Tetrachloroethane	50	nd						
Ethylbenzene	50	nd	nd	310	nd	nd	nd	nd
Xylenes	50	nd	nd	190	nd	nd	nd	nd
Styrene	50	nd						
Bromoform	50	nd						
Isopropylbenzene	50	nd	nd	79	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd						
Bromobenzene	50	nd						
1,1,2,2-Tetrachloroethane	50	nd						
n-Propylbenzene	50	nd						
2-Chlorotoluene	50	nd						
4-Chlorotoluene	50	nd						
1,3,5-Trimethylbenzene	50	nd	nd	180	nd	nd	nd	nd
tert-Butylbenzene	50	nd						
1,2,4-Trimethylbenzene	50	nd	nd	370	nd	nd	nd	nd

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results

8260B, µg/kg		HC-2-15	HC-4-15	HC-4-35	HC-3-7.5	HC-3-15	HC-3-20	HC-3-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/12/19
Date analyzed	Limits	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/12/19
sec-Butylbenzene	50	nd						
1,3-Dichlorobenzene	50	nd						
Isopropyltoluene	50	nd						
1,4-Dichlorobenzene	50	nd						
1,2-Dichlorobenzene	50	nd						
n-Butylbenzene	50	nd						
1,2-Dibromo-3-Chloropropane	50	nd						
1,2,4-Trichlorobenzene	50	nd						
Hexachloro-1,3-butadiene	50	nd						
Naphthalene	50	nd						
1,2,3-Trichlorobenzene	50	nd						

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	85%	84%	86%	85%	84%	90%
Toluene-d8	91%	88%	86%	91%	90%	90%	96%
1,2-Dichloroethane-d4	96%	96%	98%	98%	97%	98%	96%
4-Bromofluorobenzene	99%	95%	97%	98%	104%	96%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results		MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>HC-3-30</b>	<b>HC-3-30</b>	<b>HC-3-30</b>
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19

MTBE	100			
Dichlorodifluoromethane	50			
Chloromethane	50			
Vinyl chloride	50			
Bromomethane	50			
Chloroethane	50			
Trichlorofluoromethane	50			
1,1-Dichloroethene	50			
Methylene chloride	20			
trans-1,2-Dichloroethene	50			
1,1-Dichloroethane	50			
2,2-Dichloropropane	50			
cis-1,2-Dichloroethene	50			
Chloroform	50			
1,1,1-Trichloroethane	50			
Carbontetrachloride	50			
1,1-Dichloropropene	50			
Benzene	20	95%	87%	9%
1,2-Dichloroethane(EDC)	20			
Trichloroethene	20	93%	84%	10%
1,2-Dichloropropane	50			
Dibromomethane	50			
Bromodichloromethane	50			
cis-1,3-Dichloropropene	50			
Toluene	50	102%	94%	8%
trans-1,3-Dichloropropene	50			
1,1,2-Trichloroethane	50			
Tetrachloroethene	50			
1,3-Dichloropropane	50			
Dibromochloromethane	20			
1,2-Dibromoethane (EDB)*	5			
Chlorobenzene	50	107%	96%	11%
1,1,1,2-Tetrachloroethane	50			
Ethylbenzene	50			
Xylenes	50			
Styrene	50			
Bromoform	50			
Isopropylbenzene	50			
1,2,3-Trichloropropane	50			
Bromobenzene	50			
1,1,2,2-Tetrachloroethane	50			
n-Propylbenzene	50			
2-Chlorotoluene	50			
4-Chlorotoluene	50			
1,3,5-Trimethylbenzene	50			
tert-Butylbenzene	50			
1,2,4-Trimethylbenzene	50			

AAL Job Number: C90411-3  
 Client: Hart Crows  
 Project Manager: Julie Wukel  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D115507  
 Date received: 04/11/19

Analytical Results		MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>HC-3-30</b>	<b>HC-3-30</b>	<b>HC-3-30</b>
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19

sec-Butylbenzene	50
1,3-Dichlorobenzene	50
Isopropyltoluene	50
1,4-Dichlorobenzene	50
1,2-Dichlorobenzene	50
n-Butylbenzene	50
1,2-Dibromo-3-Chloropropane	50
1,2,4-Trichlorobenzene	50
Hexachloro-1,3-butadiene	50
Naphthalene	50
1,2,3-Trichlorobenzene	50

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	92%
Toluene-d8	89%	85%
1,2-Dichloroethane-d4	99%	99%
4-Bromofluorobenzene	101%	110%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	MW-1-10	MW-1-25	HC-1-5	HC-1-12.5	HC-1-15	HC-1-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	110%	108%	108%	105%	109%	104%	111%
o-Terphenyl	118%	112%	108%	98%	110%	95%	110%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

NWTPH-Dx, mg/kg		HC-1-30	HC-5-10	HC-5-15	HC-2-5	HC-2-10	HC-4-10	HC-4-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19
Kerosene/Jet fuel	20	nd						
Diesel/Fuel oil	20	nd						
Heavy oil	50	nd						

Surrogate recoveries:

Fluorobiphenyl	109%	107%	105%	108%	109%	108%	108%
o-Terphenyl	115%	109%	111%	111%	120%	112%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl			
NWTPH-Dx, mg/kg		HC-4-35	HC-3-7.5	HC-3-30	HC-3-30
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/12/19	04/12/19	04/12/19	04/12/19
Date analyzed	Limits	04/12/19	04/12/19	04/12/19	04/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	109%	107%	109%	104%
o-Terphenyl	115%	112%	113%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

<b>NWTPH-Gx / BTEX</b>		<b>MTH BLK</b>	<b>LCS MTH BLK</b>		<b>LCS</b>	<b>MW-1-10</b>	<b>MW-1-25</b>	<b>HC-1-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19
Date analyzed	Limits	04/11/19	04/11/19	04/12/19	04/12/19	04/11/19	04/11/19	04/11/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd		nd		nd	nd	nd
Gasoline	5.0	nd		nd		nd	nd	nd

**BTEX 8021B, µg/kg**

Benzene	20	nd	104%	nd	98%			nd
Toluene	50	nd	105%	nd	98%			nd
Ethylbenzene	50	nd		nd				nd
Xylenes	50	nd		nd				nd

Surrogate recoveries:

Trifluorotoluene		110%	127%	106%	112%	96%	102%	99%
Bromofluorobenzene		72%	74%	77%	76%	104%	101%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

<b>NWTPH-Gx / BTEX</b>		<b>HC-1-10</b>	<b>HC-1-12.5</b>	<b>HC-1-20</b>	<b>HC-1-25</b>	<b>HC-1-30</b>	<b>HC-5-15</b>	<b>HC-2-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19
Date analyzed	Limits	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19	04/11/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	290	30	nd	nd

**BTEX 8021B, µg/kg**

Benzene	20	nd		nd				
Toluene	50	nd		nd				
Ethylbenzene	50	nd		nd				
Xylenes	50	nd		nd				

Surrogate recoveries:

Trifluorotoluene	105%	105%	104%	130%	87%	93%	90%
Bromofluorobenzene	99%	88%	99%	99%	96%	86%	90%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results								MS
<b>NWTPH-Gx / BTEX</b>		<b>HC-4-10</b>	<b>HC-4-15</b>	<b>HC-4-35</b>	<b>HC-3-7.5</b>	<b>HC-3-30</b>	<b>HC-3-30</b>	
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19
Date analyzed	Limits	04/11/19	04/12/19	04/12/19	04/12/19	04/12/19	04/12/19	04/11/19

<b>NWTPH-Gx, mg/kg</b>								
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd	
Gasoline	5.0	nd	nd	9.8	nd	nd	nd	

<b>BTEX 8021B, µg/kg</b>								
Benzene	20							89%
Toluene	50							116%
Ethylbenzene	50							
Xylenes	50							

Surrogate recoveries:								
Trifluorotoluene		98%	92%	91%	97%	99%	113%	130%
Bromofluorobenzene		87%	82%	82%	88%	85%	75%	123%

**Data Qualifiers and Analytical Comments**  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		MSD	RPD
<b>NWTPH-Gx / BTEX</b>			
Matrix	Soil	Soil	Soil
Date extracted	Reporting	04/11/19	04/11/19
Date analyzed	Limits	04/11/19	04/11/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0
Gasoline	5.0

**BTEX 8021B, µg/kg**

Benzene	20	111%	23%
Toluene	50	124%	6%
Ethylbenzene	50		
Xylenes	50		

**Surrogate recoveries:**

Trifluorotoluene	128%
Bromofluorobenzene	102%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

PAH (8270 sim), mg/kg		MTH BLK	LCS	HC1-10	HC1-20	HC4-15	HC3-12.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
Date analyzed	Limits	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
1-Methylnaphthalene	0.10	nd		nd	nd	nd	nd
2-Methylnaphthalene	0.10	nd		nd	nd	nd	nd
Naphthalene	0.10	nd		nd	nd	nd	nd
Acenaphthylene	0.10	nd		nd	nd	nd	nd
Acenaphthene	0.10	nd	93%	nd	nd	nd	nd
Fluorene	0.10	nd		nd	nd	nd	nd
Phenanthrene	0.10	nd		nd	nd	nd	nd
Anthracene	0.10	nd		nd	nd	nd	nd
Fluoranthene	0.10	nd		nd	nd	nd	nd
Pyrene	0.10	nd	98%	nd	nd	nd	nd
Benzo(a)anthracene	0.10	nd		nd	nd	nd	nd
Chrysene	0.10	nd		nd	nd	nd	nd
Benzo(b)fluoranthene	0.10	nd		nd	nd	nd	nd
Benzo(k)fluoranthene	0.10	nd		nd	nd	nd	nd
Benzo(a)pyrene	0.10	nd		nd	nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.10	nd		nd	nd	nd	nd
Dibenzo(ah)anthracene	0.10	nd		nd	nd	nd	nd
Benzo(ghi)perylene	0.10	nd		nd	nd	nd	nd

Surrogate recoveries:

2-Fluorobiphenyl	120%	107%	55%	58%	53%	56%
o-Terphenyl	101%	96%	102%	105%	105%	106%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		MS	MSD	RPD
PAH (8270 sim), mg/kg		HC3-12.5	HC3-12.5	HC3-12.5
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/15/19	04/15/19	04/15/19
Date analyzed	Limits	04/15/19	04/15/19	04/15/19
1-Methylnaphthalene	0.10			
2-Methylnaphthalene	0.10			
Naphthalene	0.10			
Acenaphthylene	0.10			
Acenaphthene	0.10	76%	78%	3%
Fluorene	0.10			
Phenanthrene	0.10			
Anthracene	0.10			
Fluoranthene	0.10			
Pyrene	0.10	97%	98%	1%
Benzo(a)anthracene	0.10			
Chrysene	0.10			
Benzo(b)fluoranthene	0.10			
Benzo(k)fluoranthene	0.10			
Benzo(a)pyrene	0.10			
Indeno(1,2,3-cd)pyrene	0.10			
Dibenzo(ah)anthracene	0.10			
Benzo(ghi)perylene	0.10			
<b>Surrogate recoveries:</b>				
2-Fluorobiphenyl		50%	51%	
o-Terphenyl		99%	100%	

**Data Qualifiers and Analytical Comments**  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		MS MSD RPD					
8082 (PCBs), mg/kg		MTH BLK	LCS	HC1-30	HC1-30	HC1-30	HC1-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
Date analyzed	Limits	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
A1221	0.20	nd		nd			
A1232	0.20	nd		nd			
A1242 (A1016)	0.20	nd		nd			
A1248	0.20	nd		nd			
A1254	0.20	nd		nd			
A1260	0.20	nd	111%	nd	75%	74%	1%

Surrogate recoveries:

Tetrachloro-m-xylene	94%	116%	90%	113%	115%
Decachlorobiphenyl	89%	111%	85%	109%	111%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

<b>Metals (7010/7471), mg/kg</b>		<b>MTH BLK</b>	<b>LCS</b>	<b>HC-1-7.5</b>	<b>HC-1-15</b>	<b>HC-1-20</b>	<b>HC-1-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
Date analyzed	Limits	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19
Lead (Pb)	1.0	nd	86%	nd	nd	nd	nd
Chromium (Cr)	1.0	nd	93%	1.2	nd	nd	nd
Cadmium (Cd)	1.0	nd	98%	nd	nd	nd	nd
Arsenic (As)	1.0	nd	84%	nd	nd	nd	nd
Mercury (Hg) (7471)	0.5	nd	92%	nd	nd	nd	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M- matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl				MS	
<b>Metals (7010/7471), mg/kg</b>		<b>HC-5-15</b>	<b>HC-4-15</b>	<b>HC-3-12.5</b>	<b>HC-3-12.5</b>	<b>HC-3-12.5</b>	<b>MTH BLK</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/22/19
Date analyzed	Limits	04/15/19	04/15/19	04/15/19	04/15/19	04/15/19	04/22/19
Lead (Pb)	1.0	nd	nd	nd	nd	M	nd
Chromium (Cr)	1.0	nd	nd	nd	nd	M	
Cadmium (Cd)	1.0	nd	nd	nd	nd	94%	
Arsenic (As)	1.0	nd	nd	nd	nd	114%	
Mercury (Hg) (7471)	0.5	nd	nd	nd	nd	103%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M- matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results		Dupl		RPD		MS
<b>Metals (7010/7471), mg/kg</b>		<b>LCS</b>	<b>HC-1-25</b>	<b>HC-1-25</b>	<b>HC-1-25</b>	<b>HC-1-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/22/19	04/22/19	04/22/19	04/22/19	04/22/19
Date analyzed	Limits	04/22/19	04/22/19	04/22/19	04/22/19	04/22/19
Lead (Pb)	1.0	70%	1.2	1.1	8%	95%
Chromium (Cr)	1.0					
Cadmium (Cd)	1.0					
Arsenic (As)	1.0					
Mercury (Hg) (7471)	0.5					

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M- matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

<b>Moisture, SM2540B</b>	<b>MW-1-10</b>	<b>MW-1-25</b>	<b>MW-1-30</b>	<b>HC-1-5</b>	<b>HC-1-7.5</b>	<b>HC-1-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19
Moisture, %	17%	16%	17%	17%	16%	15%

AAL Job Number: C90411-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19D1155070  
 Date received: 04/11/19

Analytical Results

<b>Moisture, SM2540B</b>	<b>HC-1-12.5</b>	<b>HC-1-15</b>	<b>HC-1-17.5</b>	<b>HC-1-20</b>	<b>HC-1-25</b>	<b>HC-1-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19
Moisture, %	16%	16%	16%	15%	17%	17%

AAL Job Number: C90411-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19D1155070  
Date received: 04/11/19

Analytical Results

<b>Moisture, SM2540B</b>	<b>HC-5-10</b>	<b>HC-5-15</b>	<b>HC-2-5</b>	<b>HC-2-10</b>	<b>HC-2-15</b>	<b>HC-4-10</b>	<b>HC-4-15</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19
Moisture, %	16%	16%	16%	15%	16%	17%	14%

AAL Job Number: C90411-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19D1155070  
Date received: 04/11/19

Analytical Results

<b>Moisture, SM2540B</b>	<b>HC-4-35</b>	<b>HC-3-7.5</b>	<b>HC-3-12.5</b>	<b>HC-3-15</b>	<b>HC-3-20</b>	<b>HC-3-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19	04/16/19
Moisture, %	18%	19%	15%	18%	17%	19%

April 19, 2019

*Julie Wukelic  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Ms. Wukelic:

Please find enclosed the analytical data report for the *601 Dexter 19449-00 (C90412-3)* Project.

Samples were received on *April 12, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

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4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*



AAL Job Number: C90412-3  
Client: Hart Crowser, Inc.  
Project Manager: Julie Wukelic  
Client Project Name: 601 Dexter  
Client Project Number: 19449-00  
Date received: 04/12/19

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		MS MSD RPD					
8260B, µg/L		MTH BLK	LCS	HC-4	HC-4	HC-4	HC-4
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19
MTBE	5.0	nd		nd			
Chloromethane	1.0	nd		nd			
Vinyl chloride(*)	0.2	nd		nd			
Bromomethane	1.0	nd		nd			
Chloroethane	1.0	nd		nd			
Trichlorofluoromethane	1.0	nd		nd			
1,1-Dichloroethene	1.0	nd		nd			
Methylene chloride	1.0	nd		nd			
trans-1,2-Dichloroethene	1.0	nd		nd			
1,1-Dichloroethane	1.0	nd		nd			
2,2-Dichloropropane	1.0	nd		nd			
cis-1,2-Dichloroethene	1.0	nd		nd			
Chloroform	1.0	nd		nd			
1,1,1-Trichloroethane	1.0	nd		nd			
Carbontetrachloride	1.0	nd		nd			
1,1-Dichloropropene	1.0	nd		nd			
Benzene	1.0	nd	84%	nd	87%	93%	7%
1,2-Dichloroethane(EDC)	1.0	nd		nd			
Trichloroethene	1.0	nd	79%	nd	86%	88%	3%
1,2-Dichloropropane	1.0	nd		nd			
Dibromomethane	1.0	nd		nd			
Bromodichloromethane	1.0	nd		nd			
cis-1,3-Dichloropropene	1.0	nd		nd			
Toluene	1.0	nd	89%	nd	89%	98%	9%
trans-1,3-Dichloropropene	1.0	nd		nd			
1,1,2-Trichloroethane	1.0	nd		nd			
Tetrachloroethene	1.0	nd		nd			
1,3-Dichloropropane	1.0	nd		nd			
Dibromochloromethane	1.0	nd		nd			
1,2-Dibromoethane (EDB)*	0.01	nd		nd			
Chlorobenzene	1.0	nd	97%	nd	95%	106%	11%
1,1,1,2-Tetrachloroethane	1.0	nd		nd			
Ethylbenzene	1.0	nd		nd			
Xylenes	1.0	nd		nd			
Styrene	1.0	nd		nd			
Bromoform	1.0	nd		nd			
Isopropylbenzene	1.0	nd		nd			
1,2,3-Trichloropropane	1.0	nd		nd			
Bromobenzene	1.0	nd		nd			
1,1,2,2-Tetrachloroethane	1.0	nd		nd			
n-Propylbenzene	1.0	nd		nd			
2-Chlorotoluene	1.0	nd		nd			
4-Chlorotoluene	1.0	nd		nd			
1,3,5-Trimethylbenzene	1.0	nd		nd			
tert-Butylbenzene	1.0	nd		nd			
1,2,4-Trimethylbenzene	1.0	nd		nd			
sec-Butylbenzene	1.0	nd		nd			
1,3-Dichlorobenzene	1.0	nd		nd			

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		MS		MSD		RPD	
8260B, µg/L	MTH BLK	LCS	HC-4	HC-4	HC-4	HC-4	HC-4
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19
Isopropyltoluene	1.0	nd		nd			
1,4-Dichlorobenzene	1.0	nd		nd			
1,2-Dichlorobenzene	1.0	nd		nd			
n-Butylbenzene	1.0	nd		nd			
1,2-Dibromo-3-Chloropropane	1.0	nd		nd			
1,2,4-Trichlorobenzene	1.0	nd		nd			
Hexachloro-1,3-butadiene	1.0	nd		nd			
Naphthalene	1.0	nd		nd			
1,2,3-Trichlorobenzene	1.0	nd		nd			

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	95%	89%	92%	96%	91%
Toluene-d8	104%	86%	93%	93%	87%
1,2-Dichloroethane-d4	95%	98%	97%	98%	95%
4-Bromofluorobenzene	101%	96%	108%	99%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		Dupl		
NWTPH-Dx, mg/L		MTH BLK	HC-4	HC-4
Matrix	Water	Water	Water	Water
Date extracted	Reporting	04/13/19	04/13/19	04/13/19
Date analyzed	Limits	04/13/19	04/13/19	04/13/19
Kerosene/Jet fuel	0.20	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd
Heavy oil	0.50	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	115%	113%	130%
o-Terphenyl	102%	117%	128%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		Dupl		
NWTPH-Gx		MTH BLK	HC-4	HC-4
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	04/15/19	04/15/19	04/15/19

<b>NWTPH-Gx, mg/L</b>				
Mineral spirits/Stoddard	0.10	nd	nd	nd
Gasoline	0.10	nd	nd	nd

Surrogate recoveries:				
Trifluorotoluene		120%	112%	102%
Bromofluorobenzene		115%	93%	71%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		Dupl			MS	
<b>Metals Total (7010/747A), mg/L</b>		<b>MTH BLK</b>	<b>LCS</b>	<b>HC-4</b>	<b>HC-4</b>	<b>HC-4</b>
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	04/17/19	04/17/19	04/17/19	04/17/19	04/17/19
Date analyzed	Limits	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19	04/17,18/19
Lead (Pb)	0.002	nd	100%	0.002	nd	75%
Chromium (Cr)	0.01	nd	96%	nd	nd	92%
Cadmium (Cd)	0.005	nd	84%	nd	nd	92%
Arsenic (As)	0.005	nd	106%	nd	nd	115%
Mercury (Hg) (7470A)	0.0005	nd	118%	nd	nd	108%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90412-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Julie Wukelic  
 Client Project Name: 601 Dexter  
 Client Project Number: 19449-00  
 Date received: 04/12/19

Analytical Results		MS MSD RPD					
PAH(8270), ug/L		MTH BLK	LCS	HC-4	HC-4	HC-4	HC-4
Matrix	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19
Date analyzed	Limits	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19	04/18/19
Naphthalene	0.1	nd		nd			
1-MethylNaphthalene	0.1	nd		nd			
2-MethylNaphthalene	0.1	nd		nd			
Acenaphthylene	0.1	nd		nd			
Acenaphthene	0.1	nd	83%	nd	98%	83%	16%
Fluorene	0.1	nd		nd			
Phenanthrene	0.1	nd		nd			
Anthracene	0.1	nd		nd			
Fluoranthene	0.1	nd		nd			
Pyrene	0.1	nd	80%	nd	99%	85%	15%
Benzo(a)anthracene	0.1	nd		nd			
Chrysene	0.1	nd		nd			
Benzo(b)fluoranthene	0.1	nd		nd			
Benzo(k)fluoranthene	0.1	nd		nd			
Benzo(a)pyrene	0.1	nd		nd			
Indeno(1,2,3-cd)pyrene	0.1	nd		nd			
Dibenzo(ah)anthracene	0.1	nd		nd			
Benzo(ghi)perylene	0.1	nd		nd			

Surrogate recoveries:

Fluorobiphenyl	135%	101%	149%	104%	99%
o-Terphenyl	104%	102%	106%	99%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%



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F: (206) 352-7178  
info@fremontanalytical.com

**Hart Crowser, Inc.**  
Marissa Goodman  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121

**RE: 601 Dexter**  
**Work Order Number: 1904223**

May 03, 2019

**Attention Marissa Goodman:**

Fremont Analytical, Inc. received 4 sample(s) on 4/11/2019 for the analyses presented in the following report.

***Helium by GC/TCD***  
***Major Gases by EPA Method 3C***  
***Petroleum Fractionation by EPA Method TO-15***  
***Volatile Organic Compounds by EPA Method TO-15***

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,

Mike Ridgeway  
Laboratory Director

DoD/ELAP Certification #L17-135, ISO/IEC 17025:2005  
ORELAP Certification: WA 100009-007 (NELAP Recognized)

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**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter  
**Work Order:** 1904223

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**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1904223-001	CSE-1	04/10/2019 10:11 AM	04/11/2019 4:17 PM
1904223-002	CSW-1	04/10/2019 10:10 AM	04/11/2019 4:17 PM
1904223-003	SV-1	04/09/2019 4:50 PM	04/11/2019 4:17 PM
1904223-004	SV-2	04/10/2019 11:50 AM	04/11/2019 4:17 PM

**CLIENT:** Hart Crowser, Inc.

**Project:** 601 Dexter

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**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Air samples are reported in ppbv and ug/m3.

Major gases are reported as % ratio of the Major Gases analyzed (Carbon dioxide, Carbon Monoxide, Methane, Nitrogen, Oxygen and Hydrogen).

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 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.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Note: Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. See data results for additional information.

Rev1: Full list VOCs reported.

### 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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



**CLIENT:** Hart Crowser, Inc.

**Project:** 601 Dexter

**Lab ID:** 1904223-003

**Collection Date:** 4/9/2019 4:50:00 PM

**Client Sample ID:** SV-1

**Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Helium by GC/TCD**

Batch ID: R50823 Analyst: AD

Helium	ND	100		ppt	1	4/18/2019 12:19:00 PM
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**NOTES:**

ppt = parts per thousand

**Major Gases by EPA Method 3C**

Batch ID: R50797 Analyst: AD

Carbon Dioxide	0.124	0.0690	D	%	1.38	4/17/2019 12:59:00 PM
Methane	ND	0.0690	D	%	1.38	4/17/2019 12:59:00 PM
Oxygen	23.8	0.0690	D	%	1.38	4/17/2019 12:59:00 PM

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.38X dilution. Detections of analytes were adjusted accordingly.

**Lab ID:** 1904223-004

**Collection Date:** 4/10/2019 11:50:00 AM

**Client Sample ID:** SV-2

**Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Helium by GC/TCD**

Batch ID: R50823 Analyst: AD

Helium	ND	100		ppt	1	4/18/2019 12:27:00 PM
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**NOTES:**

ppt = parts per thousand

**Major Gases by EPA Method 3C**

Batch ID: R50797 Analyst: AD

Carbon Dioxide	ND	0.0660	D	%	1.32	4/17/2019 2:01:00 PM
Methane	ND	0.0660	D	%	1.32	4/17/2019 2:01:00 PM
Oxygen	24.1	0.0660	D	%	1.32	4/17/2019 2:01:00 PM

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.32X dilution. Detections of analytes were adjusted accordingly.



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Lab ID:** 1904223-001A

**Sample Type:** Summa Canister

**Date Sampled:** 4/10/2019

**Date Received:** 4/11/2019

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
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Petroleum Fractionation by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Aliphatic Hydrocarbon (EC5-8)	34.6	132	7.50	28.5	EPA-TO-15	04/13/2019	AD
Aliphatic Hydrocarbon (EC9-12)	<7.50	<44.2	7.50	44.2	EPA-TO-15	04/13/2019	AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15	04/13/2019	AD
Surr: 4-Bromofluorobenzene	87.8 %Rec	--	70-130	--	EPA-TO-15	04/13/2019	AD

Volatile Organic Compounds by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )				
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15	04/16/2019	AD	
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15	04/16/2019	AD	
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15	04/16/2019	AD	
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15	04/16/2019	AD	
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	*	EPA-TO-15	04/16/2019	AD
1,2,4-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15	04/16/2019	AD	
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15	04/16/2019	AD	
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15	04/16/2019	AD	
1,3,5-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,3-Butadiene	<0.125	<0.277	0.125	0.277	EPA-TO-15	04/16/2019	AD	
1,3-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dioxane	<0.100	<0.360	0.100	0.360	*	EPA-TO-15	04/16/2019	AD
(MEK) 2-Butanone	0.384	1.13	0.250	0.737	EPA-TO-15	04/16/2019	AD	
2-Hexanone	<0.250	<1.02	0.250	1.02	*	EPA-TO-15	04/16/2019	AD
Isopropyl Alcohol	0.978	2.40	0.250	0.614	EPA-TO-15	04/16/2019	AD	
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15	04/16/2019	AD	
Acetone	3.48	8.26	0.250	0.594	EPA-TO-15	04/16/2019	AD	
Acrolein	0.553	1.27	0.125	0.287	EPA-TO-15	04/16/2019	AD	
Benzene	0.183	0.586	0.0224	0.0715	B	EPA-TO-15	04/16/2019	AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-001A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0745	0.469	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	0.534	1.10	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.183	0.629	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.348	1.72	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	<0.250	<0.901	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.108	0.433	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	<0.200	<0.868	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.298	1.56	0.00319	0.0167	MDL	EPA-TO-15	04/16/2019 AD
n-Hexane	0.492	1.74	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	<0.100	<0.492	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-001A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	0.305	1.15	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.245	1.38	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	87.5 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
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Petroleum Fractionation by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Aliphatic Hydrocarbon (EC5-8)	48.1	183	7.50	28.5	EPA-TO-15	04/13/2019	AD
Aliphatic Hydrocarbon (EC9-12)	<7.50	<44.2	7.50	44.2	EPA-TO-15	04/13/2019	AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15	04/13/2019	AD
Surr: 4-Bromofluorobenzene	83.9 %Rec	--	70-130	--	EPA-TO-15	04/13/2019	AD

Volatile Organic Compounds by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )				
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15	04/16/2019	AD	
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15	04/16/2019	AD	
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15	04/16/2019	AD	
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15	04/16/2019	AD	
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	*	EPA-TO-15	04/16/2019	AD
1,2,4-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15	04/16/2019	AD	
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15	04/16/2019	AD	
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15	04/16/2019	AD	
1,3,5-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,3-Butadiene	0.411	0.910	0.125	0.277	EPA-TO-15	04/16/2019	AD	
1,3-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dioxane	<0.100	<0.360	0.100	0.360	*	EPA-TO-15	04/16/2019	AD
(MEK) 2-Butanone	0.387	1.14	0.250	0.737	EPA-TO-15	04/16/2019	AD	
2-Hexanone	<0.250	<1.02	0.250	1.02	*	EPA-TO-15	04/16/2019	AD
Isopropyl Alcohol	1.01	2.48	0.250	0.614	EPA-TO-15	04/16/2019	AD	
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15	04/16/2019	AD	
Acetone	3.91	9.29	0.250	0.594	EPA-TO-15	04/16/2019	AD	
Acrolein	0.681	1.56	0.125	0.287	EPA-TO-15	04/16/2019	AD	
Benzene	0.238	0.761	0.0224	0.0715	B	EPA-TO-15	04/16/2019	AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0744	0.468	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	0.569	1.18	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.255	0.878	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.364	1.80	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	0.366	1.32	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.162	0.652	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	<0.200	<0.868	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.297	1.56	0.00319	0.0167	MDL	EPA-TO-15	04/16/2019 AD
n-Hexane	0.910	3.21	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	<0.100	<0.492	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
	<b>(ppbv)</b>	<b>(ug/m<sup>3</sup>)</b>	<b>(ppbv)</b>	<b>(ug/m<sup>3</sup>)</b>			
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	0.314	1.18	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.273	1.53	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	85.0 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Lab ID:** 1904223-003A

**Sample Type:** Summa Canister

**Date Sampled:** 4/9/2019

**Date Received:** 4/11/2019

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
<u>Petroleum Fractionation by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
Aliphatic Hydrocarbon (EC5-8)	38.0	144	7.50	28.5	EPA-TO-15 04/13/2019 AD
Aliphatic Hydrocarbon (EC9-12)	178	1,050	75.0	442	EPA-TO-15 04/13/2019 AD
Aromatic Hydrocarbon (EC9-10)	38.0	191	6.25	31.4	EPA-TO-15 04/13/2019 AD
Surr: 4-Bromofluorobenzene	93.4 %Rec	--	70-130	--	EPA-TO-15 04/13/2019 AD
<u>Volatile Organic Compounds by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15 04/16/2019 AD
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15 04/16/2019 AD
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15 04/16/2019 AD
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15 04/16/2019 AD
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	* EPA-TO-15 04/16/2019 AD
1,2,4-Trimethylbenzene	3.03	14.9	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15 04/16/2019 AD
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15 04/16/2019 AD
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15 04/16/2019 AD
1,3,5-Trimethylbenzene	1.96	9.61	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,3-Butadiene	0.129	0.285	0.125	0.277	EPA-TO-15 04/16/2019 AD
1,3-Dichlorobenzene	0.113	0.681	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dioxane	<0.100	<0.360	0.100	0.360	* EPA-TO-15 04/16/2019 AD
(MEK) 2-Butanone	2.66	7.86	0.250	0.737	EPA-TO-15 04/16/2019 AD
2-Hexanone	<0.250	<1.02	0.250	1.02	* EPA-TO-15 04/16/2019 AD
Isopropyl Alcohol	1.80	4.43	0.250	0.614	EPA-TO-15 04/16/2019 AD
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15 04/16/2019 AD
Acetone	20.8	49.4	0.250	0.594	EPA-TO-15 04/16/2019 AD
Acrolein	0.445	1.02	0.125	0.287	EPA-TO-15 04/16/2019 AD
Benzene	0.908	2.90	0.0224	0.0715	B EPA-TO-15 04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Lab ID:** 1904223-003A

**Sample Type:** Summa Canister

**Date Sampled:** 4/9/2019

**Date Received:** 4/11/2019

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0912	0.574	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	0.178	0.871	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	<0.125	<0.258	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.116	0.401	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.470	2.33	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	<0.250	<0.901	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	0.220	0.954	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.129	0.517	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	0.781	3.39	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.631	3.31	0.0250	0.131		EPA-TO-15	04/16/2019 AD
n-Hexane	0.123	0.434	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	0.339	1.47	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	0.420	2.06	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	1.33	2.29	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	0.113	0.481	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Date Sampled:** 4/9/2019

**Lab ID:** 1904223-003A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	0.280	1.90	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	2.17	8.18	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.312	1.75	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	94.9 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-004A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
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Petroleum Fractionation by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Aliphatic Hydrocarbon (EC5-8)	270	1,030	75.0	285	EPA-TO-15	04/15/2019	AD
Aliphatic Hydrocarbon (EC9-12)	57.8	340	75.0	442	EPA-TO-15	04/15/2019	AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15	04/15/2019	AD
Surr: 4-Bromofluorobenzene	87.6 %Rec	--	70-130	--	EPA-TO-15	04/15/2019	AD

Volatile Organic Compounds by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )				
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15	04/16/2019	AD	
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15	04/16/2019	AD	
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15	04/16/2019	AD	
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15	04/16/2019	AD	
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	*	EPA-TO-15	04/16/2019	AD
1,2,4-Trimethylbenzene	1.49	7.35	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15	04/16/2019	AD	
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15	04/16/2019	AD	
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15	04/16/2019	AD	
1,3,5-Trimethylbenzene	0.382	1.88	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,3-Butadiene	0.428	0.946	0.125	0.277	EPA-TO-15	04/16/2019	AD	
1,3-Dichlorobenzene	0.297	1.78	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dichlorobenzene	0.329	1.98	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dioxane	<0.100	<0.360	0.100	0.360	*	EPA-TO-15	04/16/2019	AD
(MEK) 2-Butanone	1.71	5.03	0.250	0.737	EPA-TO-15	04/16/2019	AD	
2-Hexanone	<0.250	<1.02	0.250	1.02	*	EPA-TO-15	04/16/2019	AD
Isopropyl Alcohol	4.64	11.4	0.250	0.614	EPA-TO-15	04/16/2019	AD	
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15	04/16/2019	AD	
Acetone	34.2	81.3	0.250	0.594	EPA-TO-15	04/16/2019	AD	
Acrolein	0.373	0.855	0.125	0.287	EPA-TO-15	04/16/2019	AD	
Benzene	0.916	2.93	0.0224	0.0715	B	EPA-TO-15	04/16/2019	AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Lab ID:** 1904223-004A

**Sample Type:** Summa Canister

**Date Sampled:** 4/10/2019

**Date Received:** 4/11/2019

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0815	0.513	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	0.0626	0.288	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	<0.125	<0.258	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	1.48	5.08	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.428	2.11	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	1.16	4.17	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	0.386	1.67	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	1.72	6.90	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	1.60	6.93	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.528	2.77	0.0250	0.131		EPA-TO-15	04/16/2019 AD
n-Hexane	3.56	12.6	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	0.565	2.45	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	0.429	2.11	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	0.284	1.02	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-004A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	0.160	1.09	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	0.173	0.511	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	1.92	7.25	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	0.0425	0.228	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.291	1.63	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	92.3 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742A</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996885</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	12.4	7.50	12.00	0	103	70	130				
Aliphatic Hydrocarbon (EC9-12)	11.9	7.50	12.00	0	98.9	70	130				
Aromatic Hydrocarbon (EC9-10)	9.35	6.25	10.00	0	93.5	70	130				
Surr: 4-Bromofluorobenzene	4.04		4.000		101	70	130				

Sample ID <b>MB-R50742A</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996886</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	ND	7.50									
Aliphatic Hydrocarbon (EC9-12)	ND	7.50									
Aromatic Hydrocarbon (EC9-10)	ND	6.25									
Surr: 4-Bromofluorobenzene	3.26		4.000		81.5	70	130				

Sample ID <b>1904223-001AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>CSE-1</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996888</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	37.7	7.50						34.59	8.56	30	
Aliphatic Hydrocarbon (EC9-12)	ND	7.50						0		30	
Aromatic Hydrocarbon (EC9-10)	ND	6.25						0		30	
Surr: 4-Bromofluorobenzene	3.49		4.000		87.3	70	130		0		

Sample ID <b>LCS-R50742B</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996892</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	13.4	7.50	12.00	0	112	70	130				
Aliphatic Hydrocarbon (EC9-12)	12.9	7.50	12.00	0	108	70	130				

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742B</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996892</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aromatic Hydrocarbon (EC9-10)	9.48	6.25	10.00	0	94.8	70	130				
Surr: 4-Bromofluorobenzene	4.14		4.000		104	70	130				

Sample ID <b>MB-R50742B</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996893</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	ND	7.50									
Aliphatic Hydrocarbon (EC9-12)	ND	7.50									
Aromatic Hydrocarbon (EC9-10)	ND	6.25									
Surr: 4-Bromofluorobenzene	3.18		4.000		79.4	70	130				

Sample ID <b>1904223-004AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>SV-2</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996897</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	135	7.50						129.8	4.03	30	E
Aliphatic Hydrocarbon (EC9-12)	229	7.50						231.6	1.03	30	E
Aromatic Hydrocarbon (EC9-10)	6.29	6.25						6.199	1.49	30	
Surr: 4-Bromofluorobenzene	3.51		4.000		87.8	70	130		0		

**NOTES:**  
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID <b>LCS-R50742C</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>			Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998547</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	14.5	7.50	12.00	0	121	70	130				
Aliphatic Hydrocarbon (EC9-12)	12.2	7.50	12.00	0	101	70	130				
Aromatic Hydrocarbon (EC9-10)	10.3	6.25	10.00	0	103	70	130				

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742C</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>			Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998547</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Bromofluorobenzene      3.86      4.000      96.5      70      130

Sample ID <b>MB-R50742C</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>			Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998548</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)      ND      7.50  
 Aliphatic Hydrocarbon (EC9-12)      ND      7.50  
 Aromatic Hydrocarbon (EC9-10)      ND      6.25  
 Surr: 4-Bromofluorobenzene      3.62      4.000      90.5      70      130

Sample ID <b>1904262-001AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>			Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998552</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)      735      7.50      732.9      0.265      30      E  
 Aliphatic Hydrocarbon (EC9-12)      2,540      7.50      2,514      0.849      30      E  
 Aromatic Hydrocarbon (EC9-10)      7.36      6.25      7.280      1.14      30  
 Surr: 4-Bromofluorobenzene      3.92      4.000      98.1      70      130      0

**NOTES:**  
 E - Estimated value. The amount exceeds the linear working range of the instrument.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Helium by GC/TCD**

Sample ID <b>LCS-R50823</b>	SampType: <b>LCS</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50823</b>		Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998791</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	100	100	100.0	0	100	80	120
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**NOTES:**  
 ppt = parts per thousand

Sample ID <b>MB-R50823</b>	SampType: <b>MBLK</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50823</b>		Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998792</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	ND	100
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**NOTES:**  
 ppt = parts per thousand

Sample ID <b>1904223-03AREP</b>	SampType: <b>REP</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R50823</b>		Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998789</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	ND	100			0		30
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**NOTES:**  
 ppt = parts per thousand

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Major Gases by EPA Method 3C**

Sample ID: <b>LCS-R50797</b>	SampType: <b>LCS</b>	Units: %	Prep Date: <b>4/17/2019</b>	RunNo: <b>50797</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50797</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998276</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon Dioxide	100	0.0500	100.0	0	100	70	130				
Methane	100	0.0500	100.0	0	100	70	130				
Oxygen	100	0.0500	100.0	0	100	70	130				

Sample ID: <b>1904223-001AREP</b>	SampType: <b>REP</b>	Units: %	Prep Date: <b>4/17/2019</b>	RunNo: <b>50797</b>							
Client ID: <b>CSE-1</b>	Batch ID: <b>R50797</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998272</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon Dioxide	0.108	0.0865						0.09276	15.0	30	D
Methane	ND	0.0865						0		30	D
Oxygen	24.6	0.0865						24.68	0.219	30	D

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.73X dilution. Detections of analytes were adjusted accordingly.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	LCS-R50768	SampType:	LCS	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768
Client ID:	LCSW	Batch ID:	R50768			Analysis Date:	4/16/2019	SeqNo:	997502

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Propylene	2.19	0.400	2.000	0	109	70	130				
Dichlorodifluoromethane (CFC-12)	2.15	0.400	2.000	0	108	70	130				
Chloromethane	2.18	0.500	2.000	0	109	70	130				
Dichlorotetrafluoroethane (CFC-114)	2.09	0.400	2.000	0	104	70	130				
Vinyl chloride	2.09	0.107	2.000	0	105	70	130				
1,3-Butadiene	1.90	0.500	2.000	0	94.8	70	130				
Bromomethane	2.01	0.500	2.000	0	101	70	130				
Trichlorofluoromethane (CFC-11)	2.11	0.400	2.000	0	106	70	130				
Chloroethane	1.95	0.400	2.000	0	97.5	70	130				
Acrolein	1.56	0.500	2.000	0	77.9	70	130				
1,1-Dichloroethene (DCE)	1.91	0.400	2.000	0	95.7	70	130				
Acetone	2.13	1.00	2.000	0	106	70	130				
Isopropyl Alcohol	2.27	1.00	2.000	0	114	70	130				
Methylene chloride	0.451	2.00	2.000	0	22.6	70	130				S
Carbon disulfide	2.00	1.50	2.000	0	99.9	70	130				
trans-1,2-Dichloroethene	2.19	0.200	2.000	0	109	70	130				
Methyl tert-butyl ether (MTBE)	2.36	0.400	2.000	0	118	70	130				
n-Hexane	1.76	0.400	2.000	0	88.1	70	130				
1,1-Dichloroethane	2.04	0.200	2.000	0	102	70	130				
Vinyl acetate	2.31	1.00	2.000	0	116	70	130				
cis-1,2-Dichloroethene	1.82	0.200	2.000	0	90.8	70	130				
(MEK) 2-Butanone	2.30	1.00	2.000	0	115	70	130				
Ethyl acetate	1.74	1.00	2.000	0	87.1	70	130				
Chloroform	2.09	0.200	2.000	0	104	70	130				
Tetrahydrofuran	1.80	0.400	2.000	0	90.1	70	130				
1,1,1-Trichloroethane	1.97	0.400	2.000	0	98.5	70	130				
Carbon tetrachloride	1.94	0.0657	2.000	0	97.0	70	130				
1,2-Dichloroethane	2.02	0.200	2.000	0	101	70	130				
Benzene	1.87	0.0895	2.000	0	93.6	70	130				
Cyclohexane	1.85	0.400	2.000	0	92.3	70	130				
Trichloroethene (TCE)	1.98	0.0649	2.000	0	99.2	70	130				

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	<b>LCS-R50768</b>	SampType:	<b>LCS</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>
Client ID:	<b>LCSW</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997502</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	2.04	0.500	2.000	0	102	70	130				
Methyl methacrylate	1.87	0.400	2.000	0	93.4	70	130				
Dichlorobromomethane	2.08	0.300	2.000	0	104	70	130				
1,4-Dioxane	1.27	0.400	2.000	0	63.4	70	130				S
cis-1,3-dichloropropene	1.69	0.400	2.000	0	84.6	70	130				
Toluene	1.64	0.400	2.000	0	82.2	70	130				
trans-1,3-dichloropropene	1.90	0.500	2.000	0	95.0	70	130				
1,1,2-Trichloroethane (TCA)	2.00	0.500	2.000	0	100	70	130				
Tetrachloroethene (PCE)	2.01	0.200	2.000	0	101	70	130				
Dibromochloromethane	1.90	0.500	2.000	0	94.9	70	130				
1,2-Dibromoethane (EDB)	1.90	0.200	2.000	0	95.2	70	130				
Chlorobenzene	1.95	0.200	2.000	0	97.5	70	130				
Ethylbenzene	1.68	0.400	2.000	0	84.0	70	130				
m,p-Xylene	3.33	0.800	4.000	0	83.2	70	130				
o-Xylene	1.68	0.400	2.000	0	83.8	70	130				
Styrene	1.63	0.400	2.000	0	81.3	70	130				
Bromoform	1.89	0.200	2.000	0	94.3	70	130				
1,1,1,2-Tetrachloroethane	1.92	0.300	2.000	0	95.8	70	130				
1,3,5-Trimethylbenzene	1.69	0.300	2.000	0	84.7	70	130				
1,2,4-Trimethylbenzene	1.54	0.300	2.000	0	76.9	70	130				
Benzyl chloride	1.53	0.500	2.000	0	76.5	70	130				
4-Ethyltoluene	1.64	0.400	2.000	0	82.1	70	130				
1,3-Dichlorobenzene	1.79	0.300	2.000	0	89.4	70	130				
1,4-Dichlorobenzene	1.73	0.300	2.000	0	86.5	70	130				
1,2-Dichlorobenzene	1.82	0.400	2.000	0	90.9	70	130				
1,2,4-Trichlorobenzene	1.36	0.300	2.000	0	67.9	70	130				S
Hexachlorobutadiene	1.73	1.00	2.000	0	86.4	70	130				
Naphthalene	1.63	0.100	2.000	0	81.5	70	130				
2-Hexanone	1.10	1.00	2.000	0	55.0	70	130				S
4-Methyl-2-pentanone (MIBK)	1.53	1.00	2.000	0	76.6	70	130				
CFC-113	1.98	0.400	2.000	0	99.1	70	130				

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	<b>LCS-R50768</b>	SampType:	<b>LCS</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997502</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Heptane	1.77	0.400	2.000	0	88.6	70	130				
Surr: 4-Bromofluorobenzene	4.26		4.000		106	70	130				

**NOTES:**

S - Outlying spike recovery observed (low bias). Samples will be qualified with a \*.

Sample ID	<b>LCS-D-R50768</b>	SampType:	<b>LCS-D</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW02</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997503</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Propylene	2.23	0.400	2.000	0	112	70	130	2.188	2.05	30	
Dichlorodifluoromethane (CFC-12)	2.19	0.400	2.000	0	109	70	130	2.152	1.61	30	
Chloromethane	2.19	0.500	2.000	0	109	70	130	2.175	0.600	30	
Dichlorotetrafluoroethane (CFC-114)	2.13	0.400	2.000	0	107	70	130	2.087	2.18	30	
Vinyl chloride	2.08	0.107	2.000	0	104	70	130	2.093	0.817	30	
1,3-Butadiene	1.87	0.500	2.000	0	93.5	70	130	1.896	1.35	30	
Bromomethane	1.99	0.500	2.000	0	99.3	70	130	2.010	1.24	30	
Trichlorofluoromethane (CFC-11)	2.09	0.400	2.000	0	105	70	130	2.112	0.862	30	
Chloroethane	2.05	0.400	2.000	0	102	70	130	1.949	4.95	30	
Acrolein	1.58	0.500	2.000	0	79.0	70	130	1.558	1.41	30	
1,1-Dichloroethene (DCE)	1.94	0.400	2.000	0	96.8	70	130	1.915	1.12	30	
Acetone	2.14	1.00	2.000	0	107	70	130	2.130	0.624	30	
Isopropyl Alcohol	2.34	1.00	2.000	0	117	70	130	2.271	3.12	30	
Methylene chloride	0.677	2.00	2.000	0	33.8	70	130	0		30	S
Carbon disulfide	1.99	1.50	2.000	0	99.3	70	130	1.998	0.582	30	
trans-1,2-Dichloroethene	2.14	0.200	2.000	0	107	70	130	2.189	2.30	30	
Methyl tert-butyl ether (MTBE)	2.34	0.400	2.000	0	117	70	130	2.362	1.09	30	
n-Hexane	1.78	0.400	2.000	0	88.9	70	130	1.762	0.964	30	
1,1-Dichloroethane	2.04	0.200	2.000	0	102	70	130	2.042	0.334	30	
Vinyl acetate	2.29	1.00	2.000	0	115	70	130	2.314	0.853	30	
cis-1,2-Dichloroethene	1.79	0.200	2.000	0	89.6	70	130	1.817	1.41	30	
(MEK) 2-Butanone	2.30	1.00	2.000	0	115	70	130	2.301	0.206	30	

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	LCSW02	SampType:	LCSW02	Batch ID:	R50768	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768	
Client ID:	LCSW02	Batch ID:	R50768	Analysis Date:	4/16/2019	SeqNo:	997503					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Ethyl acetate	1.74	1.00	2.000	0	87.2	70	130	1.741	0.186	30		
Chloroform	2.08	0.200	2.000	0	104	70	130	2.086	0.0806	30		
Tetrahydrofuran	1.87	0.400	2.000	0	93.3	70	130	1.802	3.43	30		
1,1,1-Trichloroethane	1.96	0.400	2.000	0	97.9	70	130	1.970	0.653	30		
Carbon tetrachloride	1.91	0.0657	2.000	0	95.3	70	130	1.939	1.67	30		
1,2-Dichloroethane	2.00	0.200	2.000	0	100	70	130	2.020	1.03	30		
Benzene	1.90	0.0895	2.000	0	95.1	70	130	1.872	1.63	30		
Cyclohexane	1.84	0.400	2.000	0	92.1	70	130	1.845	0.147	30		
Trichloroethene (TCE)	2.00	0.0649	2.000	0	100	70	130	1.984	1.05	30		
1,2-Dichloropropane	2.01	0.500	2.000	0	101	70	130	2.041	1.41	30		
Methyl methacrylate	1.90	0.400	2.000	0	94.9	70	130	1.868	1.53	30		
Dichlorobromomethane	2.05	0.300	2.000	0	103	70	130	2.080	1.30	30		
1,4-Dioxane	1.25	0.400	2.000	0	62.7	70	130	1.267	0.991	30	S	
cis-1,3-dichloropropene	1.65	0.400	2.000	0	82.7	70	130	1.692	2.31	30		
Toluene	1.65	0.400	2.000	0	82.3	70	130	1.644	0.156	30		
trans-1,3-dichloropropene	1.90	0.500	2.000	0	94.9	70	130	1.899	0.0996	30		
1,1,2-Trichloroethane (TCA)	1.98	0.500	2.000	0	99.0	70	130	2.004	1.26	30		
Tetrachloroethene (PCE)	2.01	0.200	2.000	0	100	70	130	2.015	0.467	30		
Dibromochloromethane	1.89	0.500	2.000	0	94.5	70	130	1.897	0.385	30		
1,2-Dibromoethane (EDB)	1.85	0.200	2.000	0	92.5	70	130	1.905	2.90	30		
Chlorobenzene	1.93	0.200	2.000	0	96.7	70	130	1.951	0.893	30		
Ethylbenzene	1.70	0.400	2.000	0	85.0	70	130	1.680	1.24	30		
m,p-Xylene	3.33	0.800	4.000	0	83.2	70	130	3.328	0.0409	30		
o-Xylene	1.68	0.400	2.000	0	84.1	70	130	1.676	0.388	30		
Styrene	1.63	0.400	2.000	0	81.4	70	130	1.626	0.192	30		
Bromoform	1.86	0.200	2.000	0	92.8	70	130	1.886	1.64	30		
1,1,2,2-Tetrachloroethane	1.90	0.300	2.000	0	95.0	70	130	1.917	0.933	30		
1,3,5-Trimethylbenzene	1.71	0.300	2.000	0	85.4	70	130	1.694	0.868	30		
1,2,4-Trimethylbenzene	1.52	0.300	2.000	0	75.9	70	130	1.538	1.35	30		
Benzyl chloride	1.52	0.500	2.000	0	75.9	70	130	1.530	0.843	30		
4-Ethyltoluene	1.63	0.400	2.000	0	81.3	70	130	1.641	0.880	30		

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	<b>LCS-D-R50768</b>	SampType:	<b>LCS-D</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW02</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997503</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	1.74	0.300	2.000	0	87.1	70	130	1.788	2.63	30	
1,4-Dichlorobenzene	1.69	0.300	2.000	0	84.3	70	130	1.730	2.57	30	
1,2-Dichlorobenzene	1.77	0.400	2.000	0	88.5	70	130	1.818	2.68	30	
1,2,4-Trichlorobenzene	1.27	0.300	2.000	0	63.5	70	130	1.358	6.77	30	S
Hexachlorobutadiene	1.66	1.00	2.000	0	82.9	70	130	1.728	4.19	30	
Naphthalene	1.55	0.100	2.000	0	77.3	70	130	1.629	5.20	30	
2-Hexanone	1.12	1.00	2.000	0	56.2	70	130	1.100	2.24	30	S
4-Methyl-2-pentanone (MIBK)	1.48	1.00	2.000	0	74.2	70	130	1.531	3.09	30	
CFC-113	1.99	0.400	2.000	0	99.4	70	130	1.981	0.361	30	
Heptane	1.79	0.400	2.000	0	89.7	70	130	1.772	1.21	30	
Surr: 4-Bromofluorobenzene	4.15		4.000		104	70	130		0		

**NOTES:**

S - Outlying spike recovery observed (low bias). Samples will be qualified with a \*.

Sample ID	<b>MB-R50768</b>	SampType:	<b>MBLK</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>MBLKW</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997504</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Propylene	ND	0.100									
Dichlorodifluoromethane (CFC-12)	ND	0.100									
Chloromethane	ND	0.125									
Dichlorotetrafluoroethane (CFC-114)	ND	0.100									
Vinyl chloride	ND	0.0268									
1,3-Butadiene	ND	0.125									
Bromomethane	ND	0.125									
Trichlorofluoromethane (CFC-11)	ND	0.100									
Chloroethane	ND	0.100									
Acrolein	ND	0.125									
1,1-Dichloroethene (DCE)	ND	0.100									
Acetone	ND	0.250									
Isopropyl Alcohol	ND	0.250									

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID: <b>MB-R50768</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>	Prep Date: <b>4/16/2019</b>	RunNo: <b>50768</b>
Client ID: <b>MBLKW</b>	Batch ID: <b>R50768</b>		Analysis Date: <b>4/16/2019</b>	SeqNo: <b>997504</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methylene chloride	ND	0.500									*
Carbon disulfide	ND	0.375									
trans-1,2-Dichloroethene	ND	0.0500									
Methyl tert-butyl ether (MTBE)	ND	0.100									
n-Hexane	ND	0.100									
1,1-Dichloroethane	ND	0.0500									
Vinyl acetate	ND	0.250									
cis-1,2-Dichloroethene	ND	0.0500									
(MEK) 2-Butanone	ND	0.250									
Ethyl acetate	ND	0.250									
Chloroform	ND	0.0500									
Tetrahydrofuran	ND	0.100									
1,1,1-Trichloroethane	ND	0.100									
Carbon tetrachloride	ND	0.0164									
1,2-Dichloroethane	ND	0.0500									
Benzene	0.0961	0.0224									
Cyclohexane	ND	0.100									
Trichloroethene (TCE)	ND	0.0162									
1,2-Dichloropropane	ND	0.125									
Methyl methacrylate	ND	0.100									
Dichlorobromomethane	ND	0.0750									
1,4-Dioxane	ND	0.100									*
cis-1,3-dichloropropene	ND	0.100									
Toluene	ND	0.100									
trans-1,3-dichloropropene	ND	0.125									
1,1,2-Trichloroethane (TCA)	ND	0.125									
Tetrachloroethene (PCE)	ND	0.0500									
Dibromochloromethane	ND	0.125									
1,2-Dibromoethane (EDB)	ND	0.0500									
Chlorobenzene	ND	0.0500									
Ethylbenzene	ND	0.100									

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	MB-R50768	SampType:	MBLK	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768
Client ID:	MBLKW	Batch ID:	R50768	Analysis Date:	4/16/2019	SeqNo:	997504		

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.200									
o-Xylene	ND	0.100									
Styrene	ND	0.100									
Bromoform	ND	0.0500									
1,1,1,2-Tetrachloroethane	ND	0.0750									
1,3,5-Trimethylbenzene	ND	0.0750									
1,2,4-Trimethylbenzene	ND	0.0750									
Benzyl chloride	ND	0.125									
4-Ethyltoluene	ND	0.100									
1,3-Dichlorobenzene	ND	0.0750									
1,4-Dichlorobenzene	ND	0.0750									
1,2-Dichlorobenzene	ND	0.100									
1,2,4-Trichlorobenzene	ND	0.0750									*
Hexachlorobutadiene	ND	0.250									
Naphthalene	ND	0.00319									MDL
2-Hexanone	ND	0.250									*
4-Methyl-2-pentanone (MIBK)	ND	0.250									
CFC-113	ND	0.100									
Heptane	ND	0.100									
Surr: 4-Bromofluorobenzene	0.834		1.000		83.4	70	130				

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)

Client Name: **HART**

 Work Order Number: **1904223**

Logged by:

 Date Received: **4/11/2019 4:17:00 PM**

### Chain of Custody

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

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C \* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

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





3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

# Air Chain of Custody Record & Laboratory Services Agreement

**Client:** Hart Crowser  
**Address:** 3131 Elliott Ave #600  
**City, State, Zip:** Seattle, WA, 98121  
**Telephone:** 206-826-4221  
**Fax:**

**Date:** 4/11/19 **Page:** 1 of 1

**Laboratory Project No (Internal):** 1904223

**Project Name:** 601 Dexter

**Special Remarks:**  
naphthalene to MDL for CSE-1 & SW-1  
refer to email for VOC select list.

**Project No:** 19449-00

**Location:** 601 Dexter

**Collected by:** J. Blanchette

edits mmm 4/11/2019

**Reports to (PM):** Marissa Goodman

Air samples are disposed of one week after report is submitted to client unless otherwise requested.  OK to Dispose  Hold (fees may apply)

**Email (PM):** marissa.goodman@hartcrowser.com

Sample Name	Canister / Flow Reg Serial #	Sample Date & Time	Sample Type (Matrix) *	Container Type **	Fill Time / Flow Rate	Internal			Analysis										Comments	Final Pressure ("Hg)					
						Initial Evacuation Pressure (mtorr)	Field Initial Sample Pressure (" Hg)	Field Final Sample Pressure (" Hg)	VOCs TO15 SCAN	VOCs TO15 SCAN LL	VOCs TO15 SIM	Siloxanes TO15	Sulfur TO15	Sulfur Ext. TO15	APH TO15	Helium	Major Gases 3C								
CSE-1	12669 Canister	4/10/19 Date	IA AA	6L	8hr	10mtorr Pressure	30"Hg Pressure	9"Hg Pressure																	
	FR8-02 Flow Reg.	1011 Time				4/3/2019 Date																			
CSW-1	12667 Canister	4/10/19 Date	IA	6L	8hr	10mtorr Pressure	30"Hg Pressure	7"Hg Pressure																	
	FR8-12 Flow Reg.	1010 Time				4/3/2019 Date																			
SV-1	17240 Canister	4/9/19 Date	S	6L	~30 min	10mtorr Pressure	30"Hg Pressure	1"Hg Pressure	X																
	Flow Reg.	1650 Time				4/3/2019 Date																			
SV-2	17235 Canister	4/10/19 Date	S	6L	~30 min	10mtorr Pressure	30"Hg Pressure	2"Hg Pressure	X																
	Flow Reg.	1150 Time				4/3/2019 Date																			

\* Matrix Codes: AA = Ambient Air IA = Indoor Air L = Landfill S = Subslab / Soil Gas

\*\* Container Codes: BV = 1 Liter Bottle Vac 6L = 6L Canister 1L = 1L Canister CYL = High Pressure Cylinder F = Filter S = Sorbent Tube TB = Tedlar Bag

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished  
x *Jessica Blanchette* Date/Time 4/11/19 16:17

Received  
x *[Signature]* Date/Time 4/11/19 16:17

Relinquished  
x Date/Time

Received  
x Date/Time

**Turn-Around Time:**  
 Standard  
 3 Day  
 2 Day  
 Next Day  
Same Day \_\_\_\_\_  
(specify)



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 15, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 19409-01  
Laboratory Reference No. 1903-059

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 7, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 15, 2019  
Samples Submitted: March 7, 2019  
Laboratory Reference: 1903-059  
Project: 19409-01

### Case Narrative

Samples were collected on March 4 and 5, 2019 and received by the laboratory on March 7, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DDP1-10</b>					
Laboratory ID:	03-059-01					
Arsenic	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Barium	<b>31</b>	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	<b>ND</b>	0.53	EPA 6010D	3-14-19	3-14-19	
Chromium	<b>25</b>	0.53	EPA 6010D	3-14-19	3-14-19	
Lead	<b>ND</b>	5.3	EPA 6010D	3-14-19	3-14-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Silver	<b>ND</b>	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DDP1-20</b>					
Laboratory ID:	03-059-02					
Arsenic	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Barium	<b>36</b>	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	<b>ND</b>	0.54	EPA 6010D	3-14-19	3-14-19	
Chromium	<b>27</b>	0.54	EPA 6010D	3-14-19	3-14-19	
Lead	<b>ND</b>	5.4	EPA 6010D	3-14-19	3-14-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Silver	<b>ND</b>	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DDP3-10</b>					
Laboratory ID:	03-059-03					
Arsenic	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Barium	<b>48</b>	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	<b>ND</b>	0.55	EPA 6010D	3-14-19	3-14-19	
Chromium	<b>29</b>	0.55	EPA 6010D	3-14-19	3-14-19	
Lead	<b>ND</b>	5.5	EPA 6010D	3-14-19	3-14-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-14-19	3-14-19	
Silver	<b>ND</b>	1.1	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DDP3-25</b>					
Laboratory ID:	03-059-04					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	35	2.8	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.57	EPA 6010D	3-14-19	3-14-19	
Chromium	22	0.57	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.7	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.28	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DGW4-5</b>					
Laboratory ID:	03-059-05					
Arsenic	ND	12	EPA 6010D	3-14-19	3-14-19	
Barium	45	2.9	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.58	EPA 6010D	3-14-19	3-14-19	
Chromium	34	0.58	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.8	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.29	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	12	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.2	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DGW4-15</b>					
Laboratory ID:	03-059-06					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	58	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.54	EPA 6010D	3-14-19	3-14-19	
Chromium	47	0.54	EPA 6010D	3-14-19	3-14-19	
Lead	27	5.4	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW4-20</b>					
Laboratory ID:	03-059-07					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	36	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.53	EPA 6010D	3-14-19	3-14-19	
Chromium	22	0.53	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.3	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DGW4-35</b>					
Laboratory ID:	03-059-08					
Arsenic	ND	12	EPA 6010D	3-14-19	3-14-19	
Barium	89	3.0	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.60	EPA 6010D	3-14-19	3-14-19	
Chromium	67	0.60	EPA 6010D	3-14-19	3-14-19	
Lead	ND	6.0	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.30	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	12	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.2	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DMW1S-10</b>					
Laboratory ID:	03-059-09					
Arsenic	ND	12	EPA 6010D	3-14-19	3-14-19	
Barium	51	2.9	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.58	EPA 6010D	3-14-19	3-14-19	
Chromium	31	0.58	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.8	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.29	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	12	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.2	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DMW1S-15</b>					
Laboratory ID:	03-059-10					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	32	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.54	EPA 6010D	3-14-19	3-14-19	
Chromium	23	0.54	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.4	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DMW1S-20</b>					
Laboratory ID:	03-059-11					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	53	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.55	EPA 6010D	3-14-19	3-14-19	
Chromium	35	0.55	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.5	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DPP6-7.5</b>					
Laboratory ID:	03-059-12					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	36	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.55	EPA 6010D	3-14-19	3-14-19	
Chromium	25	0.55	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.5	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DPP6-12.5</b>					
Laboratory ID:	03-059-13					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	32	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.54	EPA 6010D	3-14-19	3-14-19	
Chromium	22	0.54	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.4	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>DPP6-17.5</b>					
Laboratory ID:	03-059-14					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	42	2.8	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.55	EPA 6010D	3-14-19	3-14-19	
Chromium	26	0.55	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.5	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.28	EPA 7471B	3-13-19	3-13-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0314SM2					
Arsenic	ND	10	EPA 6010D	3-14-19	3-14-19	
Barium	ND	2.5	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.50	EPA 6010D	3-14-19	3-14-19	
Chromium	ND	0.50	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.0	EPA 6010D	3-14-19	3-14-19	
Selenium	ND	10	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.0	EPA 6010D	3-14-19	3-14-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0313S1					
Mercury	ND	0.25	EPA 7471B	3-13-19	3-13-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-059  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
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**DUPLICATE**

Laboratory ID: 03-059-01

	ORIG	DUP	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
Arsenic	ND	ND	NA	NA	NA	NA	NA	20	
Barium	29.4	31.0	NA	NA	NA	NA	5	20	
Cadmium	ND	ND	NA	NA	NA	NA	NA	20	
Chromium	23.4	20.8	NA	NA	NA	NA	12	20	
Lead	ND	ND	NA	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	NA	20	

Laboratory ID: 03-059-01

Mercury	ND	ND	NA	NA	NA	NA	NA	20	
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Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
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**MATRIX SPIKES**

Laboratory ID: 03-059-01

	MS	MSD	MS	MSD	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
Arsenic	100	102	100	100	ND	100	102	75-125	2	20
Barium	140	133	100	100	29.4	110	103	75-125	5	20
Cadmium	42.5	43.2	50.0	50.0	ND	85	86	75-125	2	20
Chromium	114	100	100	100	23.4	91	77	75-125	13	20
Lead	235	242	250	250	ND	94	97	75-125	3	20
Selenium	97.2	98.4	100	100	ND	97	98	75-125	1	20
Silver	20.7	21.3	25.0	25.0	ND	83	85	75-125	3	20

Laboratory ID: 03-059-01

Mercury	0.498	0.498	0.500	0.500	0.0258	94	94	80-120	0	20
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**SPIKE BLANK**

Laboratory ID: SB0314SM2

Arsenic	102	100	N/A	102	80-120
Barium	110	100	N/A	110	80-120
Cadmium	43.2	50.0	N/A	86	80-120
Chromium	99.6	100	N/A	100	80-120
Lead	252	250	N/A	101	80-120
Selenium	98.0	100	N/A	98	80-120
Silver	24.8	25.0	N/A	99	80-120

Laboratory ID: SB0313S1

Mercury	0.491	0.500	N/A	98	80-120
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Date of Report: March 15, 2019  
Samples Submitted: March 7, 2019  
Laboratory Reference: 1903-059  
Project: 19409-01

### % MOISTURE

Date Analyzed: 3-13-19

Client ID	Lab ID	% Moisture
DDP1-10	03-059-01	6
DDP1-20	03-059-02	7
DDP3-10	03-059-03	9
DDP3-25	03-059-04	12
DGW4-5	03-059-05	14
DGW4-15	03-059-06	7
DGW4-20	03-059-07	6
DGW4-35	03-059-08	17
DMW1S-10	03-059-09	15
DMW1S-15	03-059-10	7
DMW1S-20	03-059-11	8
DPP6-7.5	03-059-12	9
DPP6-12.5	03-059-13	8
DPP6-17.5	03-059-14	9





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference



# Sample Custody Record

1062



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: Onsite

JOB <u>19409-01</u> LAB NUMBER <u>03-059</u>						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
PROJECT NAME <u>MMB</u>																					
HART CROWSER CONTACT <u>Roy Jensen</u>																%	NO. OF CONTAINERS				
SAMPLED BY: <u>RSP, BMD,</u>																					
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																
1	DDP1-10		3/4/19		soil	X															
2	DDP1-20		↓			X															
3	DDP3-10		3/5/19			X															
4	DDP3-2025		↓			X															
5	DGW4-5		3/4/19			X															
6	DGW4-15		↓			X															
7	DGW4-20		↓			X															
8	DGW4-35		↓			X															
9	DMW15-10		3/5/19			X															
10	DMW15-15		↓			X															
11	DMW15-20		↓			X															

RELINQUISHED BY <u>Roy Jensen</u> SIGNATURE <u>Roy Jensen</u> PRINT NAME <u>Hart Crowser</u> COMPANY	DATE <u>3/7/19</u> TIME <u>10AM</u>	RECEIVED BY <u>Wendy Green</u> SIGNATURE <u>K. Lisowski</u> PRINT NAME <u>OSE</u> COMPANY	DATE <u>3/7/19</u> TIME <u>1100</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
				COOLER NO.:	TURNAROUND TIME:
				STORAGE LOCATION:	<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
				See Lab Work Order No. _____ for Other Contract Requirements	





14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 15, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 19409-01  
Laboratory Reference No. 1903-061

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 7, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 15, 2019  
Samples Submitted: March 7, 2019  
Laboratory Reference: 1903-061  
Project: 19409-01

### Case Narrative

Samples were collected on March 4 and 6, 2019 and received by the laboratory on March 7, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL METALS  
 EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW4-GW</b>					
Laboratory ID:	03-061-01					
Arsenic	<b>87</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>1900</b>	140	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>590</b>	56	EPA 200.8	3-11-19	3-11-19	
Lead	<b>65</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>0.75</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>6.7</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	

<b>Client ID:</b>	<b>MBGW7-GW</b>					
Laboratory ID:	03-061-03					
Arsenic	<b>130</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>3500</b>	280	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>7.5</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>1700</b>	110	EPA 200.8	3-11-19	3-11-19	
Lead	<b>190</b>	11	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>2.2</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>18</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	

<b>Client ID:</b>	<b>MBGW1-GW</b>					
Laboratory ID:	03-061-04					
Arsenic	<b>ND</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>65</b>	28	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>12</b>	11	EPA 200.8	3-11-19	3-11-19	
Lead	<b>1.7</b>	1.1	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL METALS  
 EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW1-GW</b>					
Laboratory ID:	03-061-05					
Arsenic	<b>88</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>1800</b>	280	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>870</b>	110	EPA 200.8	3-11-19	3-11-19	
Lead	<b>92</b>	11	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>0.92</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>13</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	

<b>Client ID:</b>	<b>DPP3-GW</b>					
Laboratory ID:	03-061-06					
Arsenic	<b>20</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>520</b>	28	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>260</b>	11	EPA 200.8	3-11-19	3-11-19	
Lead	<b>18</b>	1.1	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	

<b>Client ID:</b>	<b>DGW3-GW</b>					
Laboratory ID:	03-061-07					
Arsenic	<b>100</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>3000</b>	280	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>5.1</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>1400</b>	110	EPA 200.8	3-11-19	3-11-19	
Lead	<b>120</b>	11	EPA 200.8	3-11-19	3-11-19	
Mercury	<b>1.3</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>12</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0311WM1					
Arsenic	<b>ND</b>	3.3	EPA 200.8	3-11-19	3-11-19	
Barium	<b>ND</b>	28	EPA 200.8	3-11-19	3-11-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-11-19	3-11-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-11-19	3-11-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-11-19	3-11-19	
Silver	<b>ND</b>	11	EPA 200.8	3-11-19	3-11-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0313W1					
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	02-107-07							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	NA	20
Barium	ND	ND	NA	NA	NA	NA	NA	20
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	ND	ND	NA	NA	NA	NA	NA	20
Selenium	ND	ND	NA	NA	NA	NA	NA	20
Silver	ND	ND	NA	NA	NA	NA	NA	20

Laboratory ID:	03-093-01							
Mercury	ND	ND	NA	NA	NA	NA	NA	20

**MATRIX SPIKES**

Laboratory ID:	02-107-07									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	108	112	111	111	ND	97	101	75-125	4	20
Barium	107	107	111	111	ND	97	96	75-125	0	20
Cadmium	109	109	111	111	ND	98	98	75-125	0	20
Chromium	102	102	111	111	ND	92	92	75-125	0	20
Lead	107	106	111	111	ND	96	96	75-125	1	20
Selenium	103	108	111	111	ND	93	97	75-125	5	20
Silver	107	104	111	111	ND	97	94	75-125	3	20

Laboratory ID:	03-093-01									
Mercury	11.1	11.3	12.5	12.5	ND	89	91	75-125	2	20

**SPIKE BLANK**

Laboratory ID:	SB0311WM1									
Arsenic	107		111		N/A	97		85-115		
Barium	103		111		N/A	93		85-115		
Cadmium	108		111		N/A	97		85-115		
Chromium	98.7		111		N/A	89		85-115		
Lead	103		111		N/A	93		85-115		
Selenium	105		111		N/A	95		85-115		
Silver	101		111		N/A	91		85-115		

Laboratory ID:	SB0313W1									
Mercury	11.1		12.5		N/A	89		80-120		



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL SUSPENDED SOLIDS  
SM 2540D**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW4-GW</b>					
Laboratory ID:	03-061-01					
Total Suspended Solids	<b>42000</b>	40	SM 2540D	3-11-19	3-11-19	

<b>Client ID:</b>	<b>MBGW7-GW</b>					
Laboratory ID:	03-061-03					
Total Suspended Solids	<b>100000</b>	40	SM 2540D	3-11-19	3-11-19	

<b>Client ID:</b>	<b>MBGW1-GW</b>					
Laboratory ID:	03-061-04					
Total Suspended Solids	<b>150</b>	4.0	SM 2540D	3-11-19	3-11-19	

<b>Client ID:</b>	<b>DGW1-GW</b>					
Laboratory ID:	03-061-05					
Total Suspended Solids	<b>5600</b>	40	SM 2540D	3-11-19	3-11-19	

<b>Client ID:</b>	<b>DPP3-GW</b>					
Laboratory ID:	03-061-06					
Total Suspended Solids	<b>5000</b>	20	SM 2540D	3-11-19	3-11-19	

<b>Client ID:</b>	<b>DGW3-GW</b>					
Laboratory ID:	03-061-07					
Total Suspended Solids	<b>20000</b>	40	SM 2540D	3-11-19	3-11-19	



Date of Report: March 15, 2019  
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 Laboratory Reference: 1903-061  
 Project: 19409-01

**TOTAL SUSPENDED SOLIDS  
 SM 2540D  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0311W1					
Total Suspended Solids	<b>ND</b>	4.0	SM 2540D	3-11-19	3-11-19	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-061-04							
	ORIG	DUP						
Total Suspended Solids	<b>152</b>	<b>152</b>	NA	NA	NA	0	22	

<b>SPIKE BLANK</b>								
Laboratory ID:	SB0311W1							
	SB	SB		SB				
Total Suspended Solids	<b>83.0</b>	100	NA	83	79-116	NA	NA	



Date of Report: March 15, 2019  
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 Project: 19409-01

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>MBGW2-30W</b>					
<b>Laboratory ID:</b>	03-061-02					
Arsenic	ND	3.0	EPA 200.8	3-8-19	3-12-19	
Barium	44	25	EPA 200.8	3-8-19	3-12-19	
Cadmium	ND	4.0	EPA 200.8	3-8-19	3-12-19	
Chromium	ND	10	EPA 200.8	3-8-19	3-12-19	
Lead	ND	1.0	EPA 200.8	3-8-19	3-12-19	
Mercury	ND	0.50	EPA 7470A	3-8-19	3-13-19	
Selenium	ND	5.0	EPA 200.8	3-8-19	3-12-19	
Silver	ND	10	EPA 200.8	3-8-19	3-12-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**DISSOLVED METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0308F1					
Arsenic	<b>ND</b>	3.0	EPA 200.8	3-8-19	3-12-19	
Barium	<b>ND</b>	25	EPA 200.8	3-8-19	3-12-19	
Cadmium	<b>ND</b>	4.0	EPA 200.8	3-8-19	3-12-19	
Chromium	<b>ND</b>	10	EPA 200.8	3-8-19	3-12-19	
Lead	<b>ND</b>	1.0	EPA 200.8	3-8-19	3-12-19	
Selenium	<b>ND</b>	5.0	EPA 200.8	3-8-19	3-12-19	
Silver	<b>ND</b>	10	EPA 200.8	3-8-19	3-12-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0308F1					
Mercury	<b>ND</b>	0.50	EPA 7470A	3-8-19	3-13-19	



Date of Report: March 15, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061  
 Project: 19409-01

**DISSOLVED METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-081-10							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	ND	ND	NA	NA	NA	NA	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	ND	ND	NA	NA	NA	NA	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-093-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>MATRIX SPIKES</b>								
Laboratory ID:	03-081-10							
	MS	MSD	MS	MSD	MS	MSD		
Arsenic	82.0	81.0	80.0	80.0	ND	103 101	75-125	1 20
Barium	79.6	79.2	80.0	80.0	ND	100 99	75-125	1 20
Cadmium	76.6	76.0	80.0	80.0	ND	96 95	75-125	1 20
Chromium	71.8	73.0	80.0	80.0	ND	90 91	75-125	2 20
Lead	73.4	73.4	80.0	80.0	ND	92 92	75-125	0 20
Selenium	86.8	85.0	80.0	80.0	ND	109 106	75-125	2 20
Silver	71.2	71.4	80.0	80.0	ND	89 89	75-125	0 20

Laboratory ID:	03-093-01							
Mercury	11.7	11.1	12.5	12.5	ND	93 89	75-125	5 20

**SPIKE BLANK**

Laboratory ID:	SB0308F1							
Arsenic	78.0		80.0		N/A	98	85-115	
Barium	76.6		80.0		N/A	96	85-115	
Cadmium	74.8		80.0		N/A	94	85-115	
Chromium	73.4		80.0		N/A	92	85-115	
Lead	77.4		80.0		N/A	97	85-115	
Selenium	82.0		80.0		N/A	103	85-115	
Silver	72.2		80.0		N/A	90	85-115	

Laboratory ID:	SB0308F1							
Mercury	11.8		12.5		N/A	94	80-120	





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference







14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 9, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 19409-01  
Laboratory Reference No. 1903-061B

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 7, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 9, 2019  
Samples Submitted: March 7, 2019  
Laboratory Reference: 1903-061B  
Project: 19409-01

### Case Narrative

Samples were collected on March 4 and 6, 2019 and received by the laboratory on March 7, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: April 9, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061B  
 Project: 19409-01

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>DGW4-GW</b>					
Laboratory ID:	03-061-01					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	27	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW7-GW</b>					
Laboratory ID:	03-061-03					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	28	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW1-GW</b>					
Laboratory ID:	03-061-04					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061B  
 Project: 19409-01

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW1-GW</b>					
Laboratory ID:	03-061-05					
Arsenic	3.1	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>DPP3-GW</b>					
Laboratory ID:	03-061-06					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>DGW3-GW</b>					
Laboratory ID:	03-061-07					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	55	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061B  
 Project: 19409-01

**DISSOLVED METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0404F1					
Arsenic	<b>ND</b>	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	<b>ND</b>	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	<b>ND</b>	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
Lead	<b>ND</b>	1.0	EPA 200.8	4-4-19	4-9-19	
Selenium	<b>ND</b>	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
Laboratory ID:	MB0404F1					
Mercury	<b>ND</b>	0.50	EPA 7470A	4-4-19	4-8-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 7, 2019  
 Laboratory Reference: 1903-061B  
 Project: 19409-01

**DISSOLVED METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-161-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	44.8	44.2	NA	NA	NA	1	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	ND	ND	NA	NA	NA	NA	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-061-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	03-161-01							
	MS	MSD	MS	MSD		MS	MSD	
Arsenic	83.8	82.8	80.0	80.0	ND	105	104	75-125
Barium	120	124	80.0	80.0	44.8	95	99	75-125
Cadmium	74.0	75.8	80.0	80.0	ND	93	95	75-125
Chromium	74.8	73.6	80.0	80.0	ND	94	92	75-125
Lead	78.8	81.2	80.0	80.0	ND	99	102	75-125
Selenium	92.0	98.6	80.0	80.0	ND	115	123	75-125
Silver	78.2	78.4	80.0	80.0	ND	98	98	75-125

Laboratory ID:	03-061-01							
Mercury	10.8	11.1	12.5	12.5	ND	86	89	75-125

**SPIKE BLANK**

Laboratory ID:	SB0404F1							
Arsenic	78.4		80.0		N/A	98		85-115
Barium	77.4		80.0		N/A	97		85-115
Cadmium	74.2		80.0		N/A	93		85-115
Chromium	74.0		80.0		N/A	93		85-115
Lead	77.4		80.0		N/A	97		85-115
Selenium	78.6		80.0		N/A	98		85-115
Silver	74.0		80.0		N/A	93		85-115

Laboratory ID:	SB0404F1							
Mercury	10.8		12.5		N/A	86		80-120





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference







14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 19, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-097

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 11, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 19, 2019  
Samples Submitted: March 11, 2019  
Laboratory Reference: 1903-097  
Project: 1940901

### Case Narrative

Samples were collected on March 6, 7, and 8, 2019 and received by the laboratory on March 11, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW2-GW</b>					
Laboratory ID:	03-097-01					
Arsenic	<b>12</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>240</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>77</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>11</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	

<b>Client ID:</b>	<b>MBGW-3</b>					
Laboratory ID:	03-097-02					
Arsenic	<b>5.9</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>140</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>61</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>5.1</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	

<b>Client ID:</b>	<b>MBGW-14</b>					
Laboratory ID:	03-097-03					
Arsenic	<b>6.1</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>130</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>38</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>16</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW-15-GW</b>					
Laboratory ID:	03-097-04					
Arsenic	<b>35</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>390</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>170</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>20</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	

<b>Client ID:</b>	<b>MBGW-16-GW</b>					
Laboratory ID:	03-097-05					
Arsenic	<b>210</b>	33	EPA 200.8	3-13-19	3-13-19	
Barium	<b>4600</b>	280	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>5.3</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>2400</b>	110	EPA 200.8	3-13-19	3-13-19	
Lead	<b>190</b>	11	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>1.8</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>31</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	

<b>Client ID:</b>	<b>MBPP5-GW</b>					
Laboratory ID:	03-097-06					
Arsenic	<b>15</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>230</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>93</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>9.3</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0313WM1					
Arsenic	<b>ND</b>	3.3	EPA 200.8	3-13-19	3-13-19	
Barium	<b>ND</b>	28	EPA 200.8	3-13-19	3-13-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-13-19	3-13-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-13-19	3-13-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-13-19	3-13-19	
Silver	<b>ND</b>	11	EPA 200.8	3-13-19	3-13-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0313W2					
Mercury	<b>ND</b>	0.50	EPA 7470A	3-13-19	3-13-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-093-09							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	NA	20
Barium	ND	ND	NA	NA	NA	NA	NA	20
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	ND	ND	NA	NA	NA	NA	NA	20
Selenium	ND	ND	NA	NA	NA	NA	NA	20
Silver	ND	ND	NA	NA	NA	NA	NA	20

Laboratory ID:	03-093-02							
Mercury	ND	ND	NA	NA	NA	NA	NA	20

**MATRIX SPIKES**

Laboratory ID:	03-093-09									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	120	126	111	111	ND	108	113	75-125	5	20
Barium	124	130	111	111	ND	112	118	75-125	5	20
Cadmium	115	121	111	111	ND	104	109	75-125	5	20
Chromium	109	113	111	111	ND	98	102	75-125	4	20
Lead	106	109	111	111	ND	95	98	75-125	3	20
Selenium	129	137	111	111	ND	117	123	75-125	6	20
Silver	88.2	95.3	111	111	ND	80	86	75-125	8	20

Laboratory ID:	03-093-02									
Mercury	11.7	11.2	12.5	12.5	ND	93	89	75-125	5	20

**SPIKE BLANK**

Laboratory ID:	SB0313WM1									
Arsenic	115		111		N/A	103		85-115		
Barium	114		111		N/A	103		85-115		
Cadmium	112		111		N/A	101		85-115		
Chromium	109		111		N/A	98		85-115		
Lead	114		111		N/A	103		85-115		
Selenium	119		111		N/A	107		85-115		
Silver	94.4		111		N/A	85		85-115		

Laboratory ID:	SB0313W2									
Mercury	11.5		12.5		N/A	92		80-120		



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW-4-2.5</b>					
Laboratory ID:	03-097-07					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	50	2.8	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.56	EPA 6010D	3-14-19	3-14-19	
Chromium	32	0.56	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.6	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.28	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>MBGW-4-5</b>					
Laboratory ID:	03-097-08					
Arsenic	ND	12	EPA 6010D	3-14-19	3-14-19	
Barium	65	2.9	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.58	EPA 6010D	3-14-19	3-14-19	
Chromium	22	0.58	EPA 6010D	3-14-19	3-14-19	
Lead	12	5.8	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.29	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	12	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.2	EPA 6010D	3-14-19	3-14-19	

<b>Client ID:</b>	<b>MBGW-4-7.5</b>					
Laboratory ID:	03-097-09					
Arsenic	ND	11	EPA 6010D	3-14-19	3-14-19	
Barium	46	2.7	EPA 6010D	3-14-19	3-14-19	
Cadmium	ND	0.54	EPA 6010D	3-14-19	3-14-19	
Chromium	26	0.54	EPA 6010D	3-14-19	3-14-19	
Lead	ND	5.4	EPA 6010D	3-14-19	3-14-19	
Mercury	ND	0.27	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-14-19	3-14-19	
Silver	ND	1.1	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW-4-25.0</b>					
Laboratory ID:	03-097-10					
Arsenic	<b>ND</b>	12	EPA 6010D	3-14-19	3-14-19	
Barium	<b>54</b>	3.0	EPA 6010D	3-14-19	3-14-19	
Cadmium	<b>ND</b>	0.60	EPA 6010D	3-14-19	3-14-19	
Chromium	<b>36</b>	0.60	EPA 6010D	3-14-19	3-14-19	
Lead	<b>ND</b>	6.0	EPA 6010D	3-14-19	3-14-19	
Mercury	<b>ND</b>	0.30	EPA 7471B	3-15-19	3-15-19	
Selenium	<b>ND</b>	12	EPA 6010D	3-14-19	3-14-19	
Silver	<b>ND</b>	1.2	EPA 6010D	3-14-19	3-14-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0314SM2					
Arsenic	<b>ND</b>	10	EPA 6010D	3-14-19	3-14-19	
Barium	<b>ND</b>	2.5	EPA 6010D	3-14-19	3-14-19	
Cadmium	<b>ND</b>	0.50	EPA 6010D	3-14-19	3-14-19	
Chromium	<b>ND</b>	0.50	EPA 6010D	3-14-19	3-14-19	
Lead	<b>ND</b>	5.0	EPA 6010D	3-14-19	3-14-19	
Selenium	<b>ND</b>	10	EPA 6010D	3-14-19	3-14-19	
Silver	<b>ND</b>	1.0	EPA 6010D	3-14-19	3-14-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0315S1					
Mercury	<b>ND</b>	0.25	EPA 7471B	3-15-19	3-15-19	



Date of Report: March 19, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-059-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	29.4	31.0	NA	NA	NA	5	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	23.4	20.8	NA	NA	NA	12	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-098-02							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	03-059-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	100	102	100	100	ND	100	102	75-125	2	20
Barium	140	133	100	100	29.4	110	103	75-125	5	20
Cadmium	42.5	43.2	50.0	50.0	ND	85	86	75-125	2	20
Chromium	114	100	100	100	23.4	91	77	75-125	13	20
Lead	235	242	250	250	ND	94	97	75-125	3	20
Selenium	97.2	98.4	100	100	ND	97	98	75-125	1	20
Silver	20.7	21.3	25.0	25.0	ND	83	85	75-125	3	20

Laboratory ID:	03-098-02									
Mercury	0.527	0.523	0.500	0.500	0.00850	104	103	80-120	1	20

**SPIKE BLANK**

Laboratory ID:	SB0314SM2									
Arsenic	102		100		N/A	102		80-120		
Barium	110		100		N/A	110		80-120		
Cadmium	43.2		50.0		N/A	86		80-120		
Chromium	99.6		100		N/A	100		80-120		
Lead	252		250		N/A	101		80-120		
Selenium	98.0		100		N/A	98		80-120		
Silver	24.8		25.0		N/A	99		80-120		

Laboratory ID:	SB0315S1									
Mercury	0.515		0.500		N/A	103		80-120		



Date of Report: March 19, 2019  
Samples Submitted: March 11, 2019  
Laboratory Reference: 1903-097  
Project: 1940901

### % MOISTURE

Date Analyzed: 3-18-19

Client ID	Lab ID	% Moisture
MBGW-4-2.5	03-097-07	11
MBGW-4-5	03-097-08	14
MBGW-4-7.5	03-097-09	8
MBGW-4-25.0	03-097-10	16





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference







14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 9, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-097B

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 11, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody,  
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 9, 2019  
Samples Submitted: March 11, 2019  
Laboratory Reference: 1903-097B  
Project: 1940901

### Case Narrative

Samples were collected on March 6, 7, and 8, 2019 and received by the laboratory on March 11, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: April 9, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-097B  
 Project: 1940901

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW2-GW</b>					
Laboratory ID:	03-097-01					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW-3</b>					
Laboratory ID:	03-097-02					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW-14</b>					
Laboratory ID:	03-097-03					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	40	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



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**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW-15-GW</b>					
Laboratory ID:	03-097-04					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	95	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW-16-GW</b>					
Laboratory ID:	03-097-05					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	25	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBPP5-GW</b>					
Laboratory ID:	03-097-06					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	26	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



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**DISSOLVED METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0404F1					
Arsenic	<b>ND</b>	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	<b>ND</b>	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	<b>ND</b>	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
Lead	<b>ND</b>	1.0	EPA 200.8	4-4-19	4-9-19	
Selenium	<b>ND</b>	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0404F1					
Mercury	<b>ND</b>	0.50	EPA 7470A	4-4-19	4-8-19	



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**DISSOLVED METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-161-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	44.8	44.2	NA	NA	NA	1	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	ND	ND	NA	NA	NA	NA	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-061-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	03-161-01									
	MS	MSD	MS	MSD	MS	MSD				
Arsenic	83.8	82.8	80.0	80.0	ND	105	104	75-125	1	20
Barium	120	124	80.0	80.0	44.8	95	99	75-125	3	20
Cadmium	74.0	75.8	80.0	80.0	ND	93	95	75-125	2	20
Chromium	74.8	73.6	80.0	80.0	ND	94	92	75-125	2	20
Lead	78.8	81.2	80.0	80.0	ND	99	102	75-125	3	20
Selenium	92.0	98.6	80.0	80.0	ND	115	123	75-125	7	20
Silver	78.2	78.4	80.0	80.0	ND	98	98	75-125	0	20

Laboratory ID:	03-061-01									
Mercury	10.8	11.1	12.5	12.5	ND	86	89	75-125	3	20

**SPIKE BLANK**

Laboratory ID:	SB0404F1									
Arsenic	78.4		80.0		N/A	98		85-115		
Barium	77.4		80.0		N/A	97		85-115		
Cadmium	74.2		80.0		N/A	93		85-115		
Chromium	74.0		80.0		N/A	93		85-115		
Lead	77.4		80.0		N/A	97		85-115		
Selenium	78.6		80.0		N/A	98		85-115		
Silver	74.0		80.0		N/A	93		85-115		

Laboratory ID:	SB0404F1									
Mercury	10.8		12.5		N/A	86		80-120		





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference



# Chain of Custody

Company: Hart Crowser  
 Project Number: 1940901  
 Project Name: Mercer Mega Block  
 Project Manager: Ray Jensen  
 Sampled by:

**Turnaround Request (in working days)**

(Check One)

Same Day     1 Day  
 2 Days     3 Days  
 Standard (7 Days)  
 \_\_\_\_\_ (other)

Laboratory Number: **03-097**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx ( <input type="checkbox"/> Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total PCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture		
1	D6W2-GW	3/7/19	1311	water	3														X						
2	MBGW-3	3/7/19	1500	water	3														X						
3	MBGW-14	3/6/19	1622 <sup>1600</sup>	water	2														X						
4	MBGW-15-GW	3/8/19	1345	water	2														X						
5	MBGW-16-GW	3/8/19	1330	water	2														X						
6	MBPP5-GW	3/7/19	1126	water	3														X						
7	MBGW-4-2.5	3/6/19	0935	soil	1														X						X
8	MBGW-4-5	3/6/19	0932	soil	1														X						X
9	MBGW4-7.5	3/6/19	0934	soil	1														X						X
10	MBGW4-25.0	3/6/19	1005	soil	1														X						X

\* DISSOLVED PCRA METALS

Signature	Company	Date	Time	Comments/Special Instructions
<u>[Signature]</u>	Hart Crowser	3/11/19	1033	* LAB FILTER ⊗ Added 4/2/19 DB (STA)
<u>Eileen Clark</u>	Alpha	3/11/19	12:10	
<u>Eileen Clark</u>	Alpha	3/11/19	12:56	
<u>Walter Liseau</u>	OSE	3/11/19	12:56	

Data Package: Standard  Level III  Level IV

Chromatograms with final report  Electronic Data Deliverables (EDDs)



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 20, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 19409-01  
Laboratory Reference No. 1903-098

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 11, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Baumeister", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 20, 2019  
Samples Submitted: March 11, 2019  
Laboratory Reference: 1903-098  
Project: 19409-01

### Case Narrative

Samples were collected on March 4 and 6, 2019 and received by the laboratory on March 11, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 20, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW2-25.0</b>					
Laboratory ID:	03-098-01					
Arsenic	ND	14	EPA 6010D	3-18-19	3-19-19	
Barium	130	3.5	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.70	EPA 6010D	3-18-19	3-19-19	
Chromium	34	0.70	EPA 6010D	3-18-19	3-19-19	
Lead	23	7.0	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.35	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	14	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.70	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>MBPP3-25.0</b>					
Laboratory ID:	03-098-02					
Arsenic	ND	11	EPA 6010D	3-18-19	3-19-19	
Barium	35	2.7	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.55	EPA 6010D	3-18-19	3-19-19	
Chromium	26	0.55	EPA 6010D	3-18-19	3-19-19	
Lead	ND	5.5	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.27	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.55	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>MBGW2-12.5</b>					
Laboratory ID:	03-098-03					
Arsenic	ND	10	EPA 6010D	3-18-19	3-19-19	
Barium	47	2.6	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.52	EPA 6010D	3-18-19	3-19-19	
Chromium	24	0.52	EPA 6010D	3-18-19	3-19-19	
Lead	8.5	5.2	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.26	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	10	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.52	EPA 6020B	3-18-19	3-20-19	



Date of Report: March 20, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW2-30</b>					
Laboratory ID:	03-098-04					
Arsenic	ND	12	EPA 6010D	3-18-19	3-19-19	
Barium	46	3.1	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.61	EPA 6010D	3-18-19	3-19-19	
Chromium	42	0.61	EPA 6010D	3-18-19	3-19-19	
Lead	ND	6.1	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.31	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	12	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.61	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>DPP5-10</b>					
Laboratory ID:	03-098-05					
Arsenic	ND	11	EPA 6010D	3-18-19	3-19-19	
Barium	36	2.9	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.57	EPA 6010D	3-18-19	3-19-19	
Chromium	40	0.57	EPA 6010D	3-18-19	3-19-19	
Lead	ND	5.7	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.29	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.57	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>DPP5-17.5</b>					
Laboratory ID:	03-098-06					
Arsenic	ND	11	EPA 6010D	3-18-19	3-19-19	
Barium	43	2.8	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.56	EPA 6010D	3-18-19	3-19-19	
Chromium	34	0.56	EPA 6010D	3-18-19	3-19-19	
Lead	ND	5.6	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.28	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.56	EPA 6020B	3-18-19	3-20-19	



Date of Report: March 20, 2019  
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 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DPP2-5</b>					
Laboratory ID:	03-098-07					
Arsenic	ND	12	EPA 6010D	3-18-19	3-19-19	
Barium	71	3.0	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.60	EPA 6010D	3-18-19	3-19-19	
Chromium	43	0.60	EPA 6010D	3-18-19	3-19-19	
Lead	ND	6.0	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.30	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	12	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.60	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>DPP2-10</b>					
Laboratory ID:	03-098-08					
Arsenic	ND	11	EPA 6010D	3-18-19	3-19-19	
Barium	54	2.7	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.54	EPA 6010D	3-18-19	3-19-19	
Chromium	34	0.54	EPA 6010D	3-18-19	3-19-19	
Lead	ND	5.4	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.27	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.54	EPA 6020B	3-18-19	3-20-19	

<b>Client ID:</b>	<b>DPP4-12.5</b>					
Laboratory ID:	03-098-09					
Arsenic	ND	11	EPA 6010D	3-18-19	3-19-19	
Barium	34	2.7	EPA 6010D	3-18-19	3-19-19	
Cadmium	ND	0.54	EPA 6010D	3-18-19	3-19-19	
Chromium	24	0.54	EPA 6010D	3-18-19	3-19-19	
Lead	ND	5.4	EPA 6010D	3-18-19	3-19-19	
Mercury	ND	0.27	EPA 7471B	3-15-19	3-15-19	
Selenium	ND	11	EPA 6010D	3-18-19	3-19-19	
Silver	ND	0.54	EPA 6020B	3-18-19	3-20-19	



Date of Report: March 20, 2019  
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 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DPP4-20</b>					
Laboratory ID:	03-098-10					
Arsenic	<b>ND</b>	12	EPA 6010D	3-18-19	3-19-19	
Barium	<b>46</b>	3.0	EPA 6010D	3-18-19	3-19-19	
Cadmium	<b>ND</b>	0.60	EPA 6010D	3-18-19	3-19-19	
Chromium	<b>31</b>	0.60	EPA 6010D	3-18-19	3-19-19	
Lead	<b>ND</b>	6.0	EPA 6010D	3-18-19	3-19-19	
Mercury	<b>ND</b>	0.30	EPA 7471B	3-15-19	3-15-19	
Selenium	<b>ND</b>	12	EPA 6010D	3-18-19	3-19-19	
Silver	<b>ND</b>	0.60	EPA 6020B	3-18-19	3-20-19	



Date of Report: March 20, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0318SM2					
Arsenic	<b>ND</b>	10	EPA 6010D	3-18-19	3-19-19	
Barium	<b>ND</b>	2.5	EPA 6010D	3-18-19	3-19-19	
Cadmium	<b>ND</b>	0.50	EPA 6010D	3-18-19	3-19-19	
Chromium	<b>ND</b>	0.50	EPA 6010D	3-18-19	3-19-19	
Lead	<b>ND</b>	5.0	EPA 6010D	3-18-19	3-19-19	
Selenium	<b>ND</b>	10	EPA 6010D	3-18-19	3-19-19	
Laboratory ID:	MB0318SM2					
Silver	<b>ND</b>	0.50	EPA 6020B	3-18-19	3-20-19	
Laboratory ID:	MB0315S1					
Mercury	<b>ND</b>	0.25	EPA 7471B	3-15-19	3-15-19	



Date of Report: March 20, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags		
<b>DUPLICATE</b>										
Laboratory ID:	03-085-01									
	ORIG	DUP								
Arsenic	29.8	32.0	NA	NA	NA	NA	7	20		
Barium	112	109	NA	NA	NA	NA	2	20		
Cadmium	ND	ND	NA	NA	NA	NA	NA	20		
Chromium	15.9	15.9	NA	NA	NA	NA	0	20		
Lead	202	198	NA	NA	NA	NA	2	20		
Selenium	ND	ND	NA	NA	NA	NA	NA	20		
Laboratory ID:	03-085-01									
Silver	ND	ND	NA	NA	NA	NA	NA	20		
Laboratory ID:	03-098-02									
Mercury	ND	ND	NA	NA	NA	NA	NA	20		
<b>MATRIX SPIKES</b>										
Laboratory ID:	03-085-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	127	129	100	100	29.8	97	100	75-125	2	20
Barium	214	215	100	100	112	103	104	75-125	1	20
Cadmium	49.8	50.7	50.0	50.0	ND	100	101	75-125	2	20
Chromium	115	116	100	100	15.9	99	100	75-125	1	20
Lead	447	454	250	250	202	98	101	75-125	1	20
Selenium	100	97.5	100	100	ND	100	98	75-125	3	20
Laboratory ID:	03-085-01									
Silver	19.0	19.6	25.0	25.0	ND	76	79	75-125	3	20
Laboratory ID:	03-098-02									
Mercury	0.527	0.523	0.500	0.500	0.00850	104	103	80-120	1	20



Date of Report: March 20, 2019  
 Samples Submitted: March 11, 2019  
 Laboratory Reference: 1903-098  
 Project: 19409-01

**TOTAL METALS  
 EPA 6010D/7471B  
 SPIKE BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>Spike Level</b>	<b>Source Result</b>	<b>Percent Recovery</b>	<b>Recovery Limits</b>	<b>Flags</b>
<b>SPIKE BLANK</b>						
Laboratory ID:	SB0318SM2					
Arsenic	<b>100</b>	100	N/A	<b>100</b>	80-120	
Barium	<b>103</b>	100	N/A	<b>103</b>	80-120	
Cadmium	<b>50.1</b>	50.0	N/A	<b>100</b>	80-120	
Chromium	<b>104</b>	100	N/A	<b>104</b>	80-120	
Lead	<b>259</b>	250	N/A	<b>104</b>	80-120	
Selenium	<b>97.7</b>	100	N/A	<b>98</b>	80-120	
Laboratory ID:	SB0318SM2					
Silver	<b>20.8</b>	25.0	N/A	<b>83</b>	80-120	
Laboratory ID:	SB0315S1					
Mercury	<b>0.515</b>	0.500	N/A	<b>103</b>	80-120	



Date of Report: March 20, 2019  
Samples Submitted: March 11, 2019  
Laboratory Reference: 1903-098  
Project: 19409-01

### % MOISTURE

Date Analyzed: 3-18-19

Client ID	Lab ID	% Moisture
MBGW2-25	03-098-01	28
MBPP3-25.0	03-098-02	8
MBGW2-12.5	03-098-03	4
MBGW2-30	03-098-04	19
DPP5-10	03-098-05	13
DPP5-17.5	03-098-06	11
DPP2-5	03-098-07	17
DPP2-10	03-098-08	7
DPP4-12.5	03-098-09	8
DPP4-20	03-098-10	17





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference







14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 25, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-137

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 14, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 25, 2019  
Samples Submitted: March 14, 2019  
Laboratory Reference: 1903-137  
Project: 1940901

### Case Narrative

Samples were collected on March 4, 5, 6, 7, 8 and 11, 2019 and received by the laboratory on March 14, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW2-10</b>					
Laboratory ID:	03-137-01					
Arsenic	ND	11	EPA 6010D	3-19-19	3-19-19	
Barium	44	2.7	EPA 6010D	3-19-19	3-19-19	
Cadmium	ND	0.55	EPA 6010D	3-19-19	3-19-19	
Chromium	37	0.55	EPA 6010D	3-19-19	3-19-19	
Lead	ND	5.5	EPA 6010D	3-19-19	3-19-19	
Mercury	ND	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-19-19	
Silver	ND	0.55	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBPP1-7.5</b>					
Laboratory ID:	03-137-02					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	81	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	46	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	93	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.55	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBPP2-10.0'</b>					
Laboratory ID:	03-137-03					
Arsenic	ND	12	EPA 6010D	3-19-19	3-20-19	
Barium	100	3.1	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.62	EPA 6010D	3-19-19	3-20-19	
Chromium	45	0.62	EPA 6010D	3-19-19	3-20-19	
Lead	21	6.2	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.31	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	12	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.62	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBPP5-25</b>					
Laboratory ID:	03-137-04					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	49	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.56	EPA 6010D	3-19-19	3-20-19	
Chromium	34	0.56	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.6	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.56	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW3-7.5</b>					
Laboratory ID:	03-137-05					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	43	2.7	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.54	EPA 6010D	3-19-19	3-20-19	
Chromium	32	0.54	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.4	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.54	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW3-12.5</b>					
Laboratory ID:	03-137-06					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	61	2.7	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	40	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.27	EPA 7471B	3-22-19	3-22-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.55	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW3-25.0</b>					
Laboratory ID:	03-137-07					
Arsenic	ND	12	EPA 6010D	3-19-19	3-20-19	
Barium	42	3.1	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.62	EPA 6010D	3-19-19	3-20-19	
Chromium	33	0.62	EPA 6010D	3-19-19	3-20-19	
Lead	ND	6.2	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.31	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	12	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.62	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>DGW1-25</b>					
Laboratory ID:	03-137-08					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	28	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	29	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.55	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>DGW1-10</b>					
Laboratory ID:	03-137-09					
Arsenic	ND	12	EPA 6010D	3-19-19	3-20-19	
Barium	47	2.9	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.58	EPA 6010D	3-19-19	3-20-19	
Chromium	34	0.58	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.8	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.29	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	12	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.58	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>DGW3-2.5</b>					
Laboratory ID:	03-137-10					
Arsenic	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Barium	<b>38</b>	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	<b>ND</b>	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	<b>25</b>	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	<b>ND</b>	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Silver	<b>ND</b>	0.55	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>DGW3-12.5</b>					
Laboratory ID:	03-137-11					
Arsenic	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Barium	<b>43</b>	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	<b>ND</b>	0.56	EPA 6010D	3-19-19	3-20-19	
Chromium	<b>30</b>	0.56	EPA 6010D	3-19-19	3-20-19	
Lead	<b>ND</b>	5.6	EPA 6010D	3-19-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Silver	<b>ND</b>	0.56	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>DGW3-25</b>					
Laboratory ID:	03-137-12					
Arsenic	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Barium	<b>30</b>	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	<b>ND</b>	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	<b>23</b>	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	<b>ND</b>	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Silver	<b>ND</b>	0.55	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW5-27.5</b>					
Laboratory ID:	03-137-13					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	39	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.56	EPA 6010D	3-19-19	3-20-19	
Chromium	25	0.56	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.6	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.56	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW1-5.0</b>					
Laboratory ID:	03-137-14					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	49	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.57	EPA 6010D	3-19-19	3-20-19	
Chromium	25	0.57	EPA 6010D	3-19-19	3-20-19	
Lead	43	5.7	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.57	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW1-17.5</b>					
Laboratory ID:	03-137-15					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	45	2.9	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.57	EPA 6010D	3-19-19	3-20-19	
Chromium	43	0.57	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.7	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.29	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.57	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW15-20</b>					
Laboratory ID:	03-137-16					
Arsenic	ND	13	EPA 6010D	3-19-19	3-20-19	
Barium	170	3.3	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.66	EPA 6010D	3-19-19	3-20-19	
Chromium	18	0.66	EPA 6010D	3-19-19	3-20-19	
Lead	ND	6.6	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.33	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	13	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.66	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MPP4-10</b>					
Laboratory ID:	03-137-17					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	48	2.7	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.55	EPA 6010D	3-19-19	3-20-19	
Chromium	29	0.55	EPA 6010D	3-19-19	3-20-19	
Lead	5.6	5.5	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.55	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW7-10</b>					
Laboratory ID:	03-137-18					
Arsenic	ND	11	EPA 6010D	3-19-19	3-20-19	
Barium	33	2.7	EPA 6010D	3-19-19	3-20-19	
Cadmium	ND	0.54	EPA 6010D	3-19-19	3-20-19	
Chromium	21	0.54	EPA 6010D	3-19-19	3-20-19	
Lead	ND	5.4	EPA 6010D	3-19-19	3-20-19	
Mercury	ND	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-19-19	3-20-19	
Silver	ND	0.54	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW7-17.5</b>					
Laboratory ID:	03-137-19					
Arsenic	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Barium	<b>37</b>	2.7	EPA 6010D	3-19-19	3-20-19	
Cadmium	<b>ND</b>	0.53	EPA 6010D	3-19-19	3-20-19	
Chromium	<b>34</b>	0.53	EPA 6010D	3-19-19	3-20-19	
Lead	<b>ND</b>	5.3	EPA 6010D	3-19-19	3-20-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Silver	<b>ND</b>	0.53	EPA 6020B	3-19-19	3-20-19	

<b>Client ID:</b>	<b>MBGW7-40.0</b>					
Laboratory ID:	03-137-20					
Arsenic	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Barium	<b>42</b>	2.8	EPA 6010D	3-19-19	3-20-19	
Cadmium	<b>ND</b>	0.56	EPA 6010D	3-19-19	3-20-19	
Chromium	<b>36</b>	0.56	EPA 6010D	3-19-19	3-20-19	
Lead	<b>ND</b>	5.6	EPA 6010D	3-19-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-19-19	3-20-19	
Silver	<b>ND</b>	0.56	EPA 6020B	3-19-19	3-20-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B/6020B  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0319SM2					
Arsenic	ND	10	EPA 6010D	3-19-19	3-19-19	
Barium	ND	2.5	EPA 6010D	3-19-19	3-19-19	
Cadmium	ND	0.50	EPA 6010D	3-19-19	3-19-19	
Chromium	ND	0.50	EPA 6010D	3-19-19	3-19-19	
Lead	ND	5.0	EPA 6010D	3-19-19	3-19-19	
Selenium	ND	10	EPA 6010D	3-19-19	3-19-19	
Laboratory ID:	MB0319SM2					
Silver	ND	0.50	EPA 6020B	3-19-19	3-20-19	
Laboratory ID:	MB0319S1					
Mercury	ND	0.25	EPA 7471B	3-19-19	3-19-19	
Laboratory ID:	MB0322SM1					
Mercury	ND	0.25	EPA 7471B	3-22-19	3-22-19	



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B/6020B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags		
<b>DUPLICATE</b>										
Laboratory ID:	03-137-01									
	ORIG	DUP								
Arsenic	ND	ND	NA	NA	NA	NA	20			
Barium	39.9	39.6	NA	NA	NA	1	20			
Cadmium	ND	ND	NA	NA	NA	NA	20			
Chromium	34.0	34.7	NA	NA	NA	2	20			
Lead	ND	ND	NA	NA	NA	NA	20			
Selenium	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-137-01									
Silver	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-137-01									
Mercury	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-203-03									
	ORIG	DUP								
Mercury	ND	ND	NA	NA	NA	NA	20			
<b>MATRIX SPIKES</b>										
Laboratory ID:	03-137-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	97.1	92.7	100	100	ND	97	93	75-125	5	20
Barium	138	139	100	100	39.9	99	99	75-125	1	20
Cadmium	50.0	49.0	50.0	50.0	ND	100	98	75-125	2	20
Chromium	133	137	100	100	34.0	99	103	75-125	3	20
Lead	250	250	250	250	ND	100	100	75-125	0	20
Selenium	94.1	93.7	100	100	ND	94	94	75-125	0	20
Laboratory ID:	03-137-01									
Silver	19.9	20.1	25.0	25.0	ND	80	81	75-125	1	20
Laboratory ID:	03-137-01									
Mercury	0.549	0.527	0.500	0.500	0.0129	107	103	80-120	4	20
Laboratory ID:	03-203-03									
	MS	MSD	MS	MSD		MS	MSD			
Mercury	0.556	0.556	0.500	0.500	0.0528	101	101	80-120	0	20



Date of Report: March 25, 2019  
 Samples Submitted: March 14, 2019  
 Laboratory Reference: 1903-137  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**  
**SPIKE BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>Spike Level</b>	<b>Source Result</b>	<b>Percent Recovery</b>	<b>Recovery Limits</b>	<b>Flags</b>
<b>SPIKE BLANK</b>						
Laboratory ID:	SB0319SM2					
Arsenic	<b>96.7</b>	100	N/A	<b>97</b>	80-120	
Barium	<b>102</b>	100	N/A	<b>102</b>	80-120	
Cadmium	<b>49.0</b>	50.0	N/A	<b>98</b>	80-120	
Chromium	<b>103</b>	100	N/A	<b>103</b>	80-120	
Lead	<b>262</b>	250	N/A	<b>105</b>	80-120	
Selenium	<b>95.1</b>	100	N/A	<b>95</b>	80-120	
<hr/>						
Laboratory ID:	SB0319SM2					
Silver	<b>21.4</b>	25.0	N/A	<b>86</b>	80-120	
<hr/>						
Laboratory ID:	SB0319S1					
Mercury	<b>0.518</b>	0.500	N/A	<b>104</b>	80-120	
<hr/>						
Laboratory ID:	SB0322S1					
Mercury	<b>0.539</b>	0.500	N/A	<b>108</b>	80-120	



Date of Report: March 25, 2019  
Samples Submitted: March 14, 2019  
Laboratory Reference: 1903-137  
Project: 1940901

### % MOISTURE

Date Analyzed: 3-19-19

Client ID	Lab ID	% Moisture
DGW2-10	03-137-01	9
MBPP1-7.5	03-137-02	9
MBPP2-10.0'	03-137-03	19
MBPP5-25	03-137-04	10
MBGW3-7.5	03-137-05	8
MBGW3-12.5	03-137-06	9
MBGW3-25.0	03-137-07	20
DGW1-25	03-137-08	9
DGW1-10	03-137-09	14
DGW3-2.5	03-137-10	10
DGW3-12.5	03-137-11	11
DGW3-25	03-137-12	9
MBGW5-27.5	03-137-13	11
MBGW1-5.0	03-137-14	12
MBGW1-17.5	03-137-15	13
MBGW15-20	03-137-16	24
MPP4-10	03-137-17	8
MBGW7-10	03-137-18	8
MBGW7-17.5	03-137-19	6
MBGW7-40.0	03-137-20	11





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference



# Sample Custody Record

Samples Shipped to: Onsite



10 of 2

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u>	LAB NUMBER <u>03-137</u>	REQUESTED ANALYSIS RCRA 8 Metals % moisture NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>Mercer Mega Block</u>			
HART CROWSER CONTACT <u>Ray Jensen</u>			
SAMPLED BY:			

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX													
1	DGW2-10		3/4/19		Soil	X												
2	MBPP1-7.5		3/5/19			X												
3	MBPP2-10.0'		3/5/19			X												
4	MBPP5-25		3/7/19			X												
5	MBGW3-7.5		3/7/19			X												
6	MBGW3-12.5		3/7/19			X												
7	MBGW3-25.0		3/7/19			X												
8	DGW1-25		3/6/19	1106		X												
9	DGW1-10		3/6/19	1010		X												
10	DGW3-2.5		3/6/19	1335		X												
11	DGW3-12.5		3/6/19	1404		X												
12	DGW3-25		3/6/19	1442		X												

RELINQUISHED BY <u>[Signature]</u> SIGNATURE <u>Rebecca Deizer</u> PRINT NAME <u>Hart Crowser</u> COMPANY	DATE <u>3/14/19</u> TIME <u>9:50</u>	RECEIVED BY <u>[Signature]</u> SIGNATURE <u>Speedy</u> PRINT NAME <u>Speedy</u> COMPANY	DATE <u>3/14</u> TIME <u>10:50</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
RELINQUISHED BY <u>[Signature]</u> SIGNATURE <u>Anthony M</u> PRINT NAME <u>Anthony M</u> COMPANY	DATE <u>3/14</u> TIME <u>11:52</u>	RECEIVED BY <u>[Signature]</u> SIGNATURE <u>K Lisowski</u> PRINT NAME <u>[Signature]</u> COMPANY	DATE <u>3/14</u> TIME <u>11:52</u>	COOLER NO.: STORAGE LOCATION: See Lab Work Order No. _____ for Other Contract Requirements	SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____





14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 26, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-148

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 15, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: March 26, 2019  
Samples Submitted: March 15, 2019  
Laboratory Reference: 1903-148  
Project: 1940901

### Case Narrative

Samples were collected on March 8, 11, 12, 13 and 14, 2019 and received by the laboratory on March 15, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: March 26, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBPP7-5.0</b>					
Laboratory ID:	03-148-01					
Arsenic	ND	12	EPA 6010D	3-20-19	3-20-19	
Barium	200	3.0	EPA 6010D	3-20-19	3-20-19	
Cadmium	ND	0.60	EPA 6010D	3-20-19	3-20-19	
Chromium	38	0.60	EPA 6010D	3-20-19	3-20-19	
Lead	6.6	6.0	EPA 6010D	3-20-19	3-20-19	
Mercury	0.40	0.30	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	12	EPA 6010D	3-20-19	3-20-19	
Silver	ND	0.60	EPA 6020B	3-20-19	3-21-19	

<b>Client ID:</b>	<b>MBPP8-15.0</b>					
Laboratory ID:	03-148-02					
Arsenic	16	13	EPA 6010D	3-20-19	3-20-19	
Barium	80	3.2	EPA 6010D	3-20-19	3-20-19	
Cadmium	ND	0.63	EPA 6010D	3-20-19	3-20-19	
Chromium	30	0.63	EPA 6010D	3-20-19	3-20-19	
Lead	16	6.3	EPA 6010D	3-20-19	3-20-19	
Mercury	ND	0.32	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	13	EPA 6010D	3-20-19	3-20-19	
Silver	ND	0.63	EPA 6020B	3-20-19	3-21-19	

<b>Client ID:</b>	<b>MBGW9-10.0</b>					
Laboratory ID:	03-148-03					
Arsenic	ND	11	EPA 6010D	3-20-19	3-20-19	
Barium	43	2.6	EPA 6010D	3-20-19	3-20-19	
Cadmium	ND	0.53	EPA 6010D	3-20-19	3-20-19	
Chromium	42	0.53	EPA 6010D	3-20-19	3-20-19	
Lead	ND	5.3	EPA 6010D	3-20-19	3-20-19	
Mercury	ND	0.26	EPA 7471B	3-19-19	3-19-19	
Selenium	ND	11	EPA 6010D	3-20-19	3-20-19	
Silver	ND	0.53	EPA 6020B	3-20-19	3-21-19	



Date of Report: March 26, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW10-10.0</b>					
Laboratory ID:	03-148-04					
Arsenic	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Barium	<b>48</b>	2.7	EPA 6010D	3-20-19	3-20-19	
Cadmium	<b>ND</b>	0.54	EPA 6010D	3-20-19	3-20-19	
Chromium	<b>44</b>	0.54	EPA 6010D	3-20-19	3-20-19	
Lead	<b>ND</b>	5.4	EPA 6010D	3-20-19	3-20-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Silver	<b>ND</b>	0.54	EPA 6020B	3-20-19	3-21-19	

<b>Client ID:</b>	<b>MBGW11-5.0</b>					
Laboratory ID:	03-148-09					
Arsenic	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Barium	<b>68</b>	2.8	EPA 6010D	3-20-19	3-20-19	
Cadmium	<b>ND</b>	0.55	EPA 6010D	3-20-19	3-20-19	
Chromium	<b>38</b>	0.55	EPA 6010D	3-20-19	3-20-19	
Lead	<b>10</b>	5.5	EPA 6010D	3-20-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Silver	<b>ND</b>	0.55	EPA 6020B	3-20-19	3-21-19	

<b>Client ID:</b>	<b>HMW21B-7.5</b>					
Laboratory ID:	03-148-10					
Arsenic	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Barium	<b>72</b>	2.8	EPA 6010D	3-20-19	3-20-19	
Cadmium	<b>ND</b>	0.56	EPA 6010D	3-20-19	3-20-19	
Chromium	<b>33</b>	0.56	EPA 6010D	3-20-19	3-20-19	
Lead	<b>10</b>	5.6	EPA 6010D	3-20-19	3-20-19	
Mercury	<b>ND</b>	0.28	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Silver	<b>ND</b>	0.56	EPA 6020B	3-20-19	3-21-19	



Date of Report: March 26, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148  
 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW6-10</b>					
Laboratory ID:	03-148-14					
Arsenic	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Barium	<b>32</b>	2.7	EPA 6010D	3-20-19	3-20-19	
Cadmium	<b>ND</b>	0.54	EPA 6010D	3-20-19	3-20-19	
Chromium	<b>21</b>	0.54	EPA 6010D	3-20-19	3-20-19	
Lead	<b>ND</b>	5.4	EPA 6010D	3-20-19	3-20-19	
Mercury	<b>ND</b>	0.27	EPA 7471B	3-19-19	3-19-19	
Selenium	<b>ND</b>	11	EPA 6010D	3-20-19	3-20-19	
Silver	<b>ND</b>	0.54	EPA 6020B	3-20-19	3-21-19	



Date of Report: March 26, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148  
 Project: 1940901

**TOTAL METALS  
 EPA 6010D/7471B/6020B  
 METHOD BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0320SM1					
Arsenic	<b>ND</b>	10	EPA 6010D	3-20-19	3-20-19	
Barium	<b>ND</b>	2.5	EPA 6010D	3-20-19	3-20-19	
Cadmium	<b>ND</b>	0.50	EPA 6010D	3-20-19	3-20-19	
Chromium	<b>ND</b>	0.50	EPA 6010D	3-20-19	3-20-19	
Lead	<b>ND</b>	5.0	EPA 6010D	3-20-19	3-20-19	
Selenium	<b>ND</b>	10	EPA 6010D	3-20-19	3-20-19	
Laboratory ID:	MB0320SM1					
Silver	<b>ND</b>	0.50	EPA 6020B	3-20-19	3-21-19	
Laboratory ID:	MB0319S2					
Mercury	<b>ND</b>	0.25	EPA 7471B	3-19-19	3-19-19	
Laboratory ID:	MB0322S1					
Mercury	<b>ND</b>	0.25	EPA 7471B	3-22-19	3-22-19	



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**TOTAL METALS  
 EPA 6010D/7471B/6020B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags		
<b>DUPLICATE</b>										
Laboratory ID:	03-123-04									
	ORIG	DUP								
Arsenic	ND	ND	NA	NA	NA	NA	20			
Barium	39.9	42.6	NA	NA	NA	7	20			
Cadmium	ND	ND	NA	NA	NA	NA	20			
Chromium	46.9	39.0	NA	NA	NA	19	20			
Lead	ND	ND	NA	NA	NA	NA	20			
Selenium	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-123-04									
Silver	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-123-04									
Mercury	ND	ND	NA	NA	NA	NA	20			
Laboratory ID:	03-203-03									
	ORIG	DUP								
Mercury	ND	ND	NA	NA	NA	NA	20			
<b>MATRIX SPIKES</b>										
Laboratory ID:	03-123-04									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	101	97.8	100	100	ND	101	98	75-125	3	20
Barium	141	142	100	100	39.9	101	102	75-125	1	20
Cadmium	48.4	48.4	50.0	50.0	ND	97	97	75-125	0	20
Chromium	138	139	100	100	46.9	92	92	75-125	0	20
Lead	243	243	250	250	ND	97	97	75-125	0	20
Selenium	93.1	99.3	100	100	ND	93	99	75-125	6	20
Laboratory ID:	03-123-04									
Silver	18.8	19.3	25.0	25.0	ND	75	77	75-125	3	20
Laboratory ID:	03-123-04									
Mercury	0.576	0.593	0.500	0.500	0.0136	112	116	80-120	3	20
Laboratory ID:	03-203-03									
	MS	MSD	MS	MSD		MS	MSD			
Mercury	0.556	0.556	0.500	0.500	ND	111	111	80-120	0	20



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 Project: 1940901

**TOTAL METALS**  
**EPA 6010D/7471B/6020B**  
**SPIKE BLANK QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>Spike Level</b>	<b>Source Result</b>	<b>Percent Recovery</b>	<b>Recovery Limits</b>	<b>Flags</b>
<b>SPIKE BLANK</b>						
Laboratory ID:	SB0320SM1					
Arsenic	<b>102</b>	100	N/A	<b>102</b>	80-120	
Barium	<b>102</b>	100	N/A	<b>102</b>	80-120	
Cadmium	<b>49.3</b>	50.0	N/A	<b>99</b>	80-120	
Chromium	<b>104</b>	100	N/A	<b>104</b>	80-120	
Lead	<b>253</b>	250	N/A	<b>101</b>	80-120	
Selenium	<b>101</b>	100	N/A	<b>101</b>	80-120	
<hr/>						
Laboratory ID:	SB0320SM1					
Silver	<b>21.3</b>	25.0	N/A	<b>85</b>	80-120	
<hr/>						
Laboratory ID:	SB0319S2					
Mercury	<b>0.557</b>	0.500	N/A	<b>111</b>	80-120	
<hr/>						
Laboratory ID:	SB0322S1					
Mercury	<b>0.539</b>	0.500	N/A	<b>108</b>	80-120	



Date of Report: March 26, 2019  
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 Project: 1940901

**TOTAL METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW9-GW</b>					
Laboratory ID:	03-148-05					
Arsenic	71	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	1900	110	EPA 200.8	3-19-19	3-19-19	
Cadmium	ND	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	930	44	EPA 200.8	3-19-19	3-19-19	
Lead	89	4.4	EPA 200.8	3-19-19	3-19-19	
Mercury	0.88	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	7.9	5.6	EPA 200.8	3-19-19	3-19-19	
Silver	ND	11	EPA 200.8	3-19-19	3-19-19	

<b>Client ID:</b>	<b>MBGW10-GW</b>					
Laboratory ID:	03-148-06					
Arsenic	180	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	4200	280	EPA 200.8	3-19-19	3-19-19	
Cadmium	6.1	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	2300	110	EPA 200.8	3-19-19	3-19-19	
Lead	200	11	EPA 200.8	3-19-19	3-19-19	
Mercury	2.3	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	20	11	EPA 200.8	3-19-19	3-19-19	
Silver	ND	22	EPA 200.8	3-19-19	3-19-19	

<b>Client ID:</b>	<b>MBGW5-GW</b>					
Laboratory ID:	03-148-07					
Arsenic	130	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	3200	280	EPA 200.8	3-19-19	3-19-19	
Cadmium	5.8	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	1500	110	EPA 200.8	3-19-19	3-19-19	
Lead	140	11	EPA 200.8	3-19-19	3-19-19	
Mercury	2.2	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	25	11	EPA 200.8	3-19-19	3-19-19	
Silver	ND	11	EPA 200.8	3-19-19	3-19-19	



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 Project: 1940901

**TOTAL METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW11-GW</b>					
Laboratory ID:	03-148-08					
Arsenic	<b>14</b>	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	<b>240</b>	56	EPA 200.8	3-19-19	3-19-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	<b>86</b>	22	EPA 200.8	3-19-19	3-19-19	
Lead	<b>8.9</b>	2.2	EPA 200.8	3-19-19	3-19-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-19-19	3-19-19	
Silver	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	

<b>Client ID:</b>	<b>MBGW6-GW</b>					
Laboratory ID:	03-148-11					
Arsenic	<b>15</b>	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	<b>200</b>	56	EPA 200.8	3-19-19	3-19-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	<b>74</b>	22	EPA 200.8	3-19-19	3-19-19	
Lead	<b>10</b>	2.2	EPA 200.8	3-19-19	3-19-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-19-19	3-19-19	
Silver	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	

<b>Client ID:</b>	<b>MBGW13-GW</b>					
Laboratory ID:	03-148-12					
Arsenic	<b>110</b>	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	<b>1600</b>	110	EPA 200.8	3-19-19	3-19-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	<b>910</b>	44	EPA 200.8	3-19-19	3-19-19	
Lead	<b>110</b>	4.4	EPA 200.8	3-19-19	3-19-19	
Mercury	<b>1.8</b>	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	<b>9.5</b>	5.6	EPA 200.8	3-19-19	3-19-19	
Silver	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	



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 Project: 1940901

**TOTAL METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>DPP3-GW</b>					
Laboratory ID:	03-148-13					
Arsenic	<b>280</b>	6.7	EPA 200.8	3-19-19	3-19-19	
Barium	<b>14000</b>	1100	EPA 200.8	3-19-19	3-19-19	
Cadmium	<b>13</b>	8.9	EPA 200.8	3-19-19	3-19-19	
Chromium	<b>5400</b>	440	EPA 200.8	3-19-19	3-19-19	
Lead	<b>370</b>	44	EPA 200.8	3-19-19	3-19-19	
Mercury	<b>2.8</b>	0.50	EPA 7470A	3-19-19	3-19-19	
Selenium	<b>35</b>	11	EPA 200.8	3-19-19	3-19-19	
Silver	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	



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 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0319WM1					
Arsenic	<b>ND</b>	3.3	EPA 200.8	3-19-19	3-19-19	
Barium	<b>ND</b>	28	EPA 200.8	3-19-19	3-19-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-19-19	3-19-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-19-19	3-19-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-19-19	3-19-19	
Silver	<b>ND</b>	11	EPA 200.8	3-19-19	3-19-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0319W1					
Mercury	<b>ND</b>	0.50	EPA 7470A	3-19-19	3-19-19	



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**TOTAL METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-162-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	NA	20
Barium	ND	ND	NA	NA	NA	NA	NA	20
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	ND	ND	NA	NA	NA	NA	NA	20
Selenium	ND	ND	NA	NA	NA	NA	NA	20
Silver	ND	ND	NA	NA	NA	NA	NA	20

Laboratory ID:	03-157-01							
Mercury	ND	ND	NA	NA	NA	NA	NA	20

**MATRIX SPIKES**

Laboratory ID:	03-162-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	128	125	111	111	ND	116	113	75-125	2	20
Barium	130	132	111	111	ND	117	119	75-125	2	20
Cadmium	123	122	111	111	ND	111	110	75-125	0	20
Chromium	121	116	111	111	ND	109	105	75-125	4	20
Lead	120	118	111	111	ND	108	107	75-125	1	20
Selenium	127	123	111	111	ND	115	111	75-125	4	20
Silver	116	112	111	111	ND	105	101	75-125	3	20

Laboratory ID:	03-157-01									
Mercury	12.2	12.2	12.5	12.5	ND	97	97	75-125	0	20

**SPIKE BLANK**

Laboratory ID:	SB0319WM1									
Arsenic	117		111		N/A	106		85-115		
Barium	118		111		N/A	106		85-115		
Cadmium	115		111		N/A	104		85-115		
Chromium	110		111		N/A	99		85-115		
Lead	118		111		N/A	106		85-115		
Selenium	114		111		N/A	103		85-115		
Silver	109		111		N/A	98		85-115		

Laboratory ID:	SB0319W1									
Mercury	11.9		12.5		N/A	95		80-120		



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**TOTAL SUSPENDED SOLIDS  
 SM 2540D**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW9-GW</b>					
Laboratory ID:	03-148-05					
Total Suspended Solids	<b>15000</b>	80	SM 2540D	3-18-19	3-18-19	

<b>Client ID:</b>	<b>MBGW10-GW</b>					
Laboratory ID:	03-148-06					
Total Suspended Solids	<b>38000</b>	80	SM 2540D	3-18-19	3-18-19	

<b>Client ID:</b>	<b>MBGW5-GW</b>					
Laboratory ID:	03-148-07					
Total Suspended Solids	<b>47000</b>	80	SM 2540D	3-18-19	3-18-19	

<b>Client ID:</b>	<b>MBGW11-GW</b>					
Laboratory ID:	03-148-08					
Total Suspended Solids	<b>2400</b>	8.0	SM 2540D	3-18-19	3-18-19	

<b>Client ID:</b>	<b>MBGW6-GW</b>					
Laboratory ID:	03-148-11					
Total Suspended Solids	<b>3800</b>	16	SM 2540D	3-18-19	3-18-19	

<b>Client ID:</b>	<b>MBGW13-GW</b>					
Laboratory ID:	03-148-12					
Total Suspended Solids	<b>11000</b>	40	SM 2540D	3-18-19	3-18-19	



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**TOTAL SUSPENDED SOLIDS  
 SM 2540D  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0318W1					
Total Suspended Solids	<b>ND</b>	4.0	SM 2540D	3-18-19	3-18-19	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-148-11							
	ORIG	DUP						
Total Suspended Solids	<b>3800</b>	<b>3620</b>	NA	NA	NA	NA	5	22

<b>SPIKE BLANK</b>								
Laboratory ID:	SB0318W1							
	SB	SB		SB				
Total Suspended Solids	<b>93.0</b>	100	NA	93	79-116	NA	NA	



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### % MOISTURE

Date Analyzed: 3-19-19

Client ID	Lab ID	% Moisture
MBPP7-5.0	03-148-01	16
MBPP8-15.0	03-148-02	21
MBGW9-10.0	03-148-03	5
MBGW10-10.0	03-148-04	7
MBGW11-5.0	03-148-09	9
HMW21B-7.5	03-148-10	11
MBGW6-10	03-148-14	7





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference



# Sample Custody Record

Samples Shipped to: Onsite



1 of 2

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB 1940901 LAB NUMBER 03-148

PROJECT NAME Merced Mega Block

HART CROWSER CONTACT Roy Jensen

SAMPLED BY:

HPCRA Metals  
TSS

REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																	
1	MBPP7-5.0		3/8/19	1158	soil	X															X	1
	<del>MBPP8-15.0</del>																					
2	MBPP8-15.0		3/8/19	0915		X															X	1
3	MBGW9-10.0		3/13/19	1355		X																
4	MBGW10-10.0		3/13/19	0900		X																
5	MBGW9-GW		3/13/19	1615	water	X	X															3
6	MBGW10-GW		3/13/19	1115	water	X	X															
7	MBGW5-GW		3/11/19	1300		X	X															
8	MBGW11-GW		3/12/19	1443		X	X															
9	MBGW11-5.0		3/12/19	0913	soil	X															X	1
10	HMW21B-7.5		3/12/19	1140	soil	X																1
11	MBGW6-GW		3/14/19	1620	water	X	X															3

RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:					TOTAL NUMBER OF CONTAINERS	
SIGNATURE		TIME	SIGNATURE		TIME						SAMPLE RECEIPT INFORMATION	
PRINT NAME			PRINT NAME								CUSTODY SEALS:	
COMPANY			COMPANY								<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT	
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.:		STORAGE LOCATION:		TURNAROUND TIME:		
SIGNATURE		TIME	SIGNATURE		TIME	See Lab Work Order No. _____		<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____				
PRINT NAME			PRINT NAME			for Other Contract Requirements						
COMPANY			COMPANY									





**OnSite  
Environmental Inc.**

14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 9, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-148B

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 15, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody,  
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 9, 2019  
Samples Submitted: March 15, 2019  
Laboratory Reference: 1903-148B  
Project: 1940901

### Case Narrative

Samples were collected on March 8, 11, 12, 13 and 14, 2019 and received by the laboratory on March 15, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: April 9, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148B  
 Project: 1940901

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW9-GW</b>					
Laboratory ID:	03-148-05					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW10-GW</b>					
Laboratory ID:	03-148-06					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	26	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW5-GW</b>					
Laboratory ID:	03-148-07					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148B  
 Project: 1940901

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MBGW11-GW</b>					
Laboratory ID:	03-148-08					
Arsenic	6.9	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	32	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW6-GW</b>					
Laboratory ID:	03-148-11					
Arsenic	ND	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	

<b>Client ID:</b>	<b>MBGW13-GW</b>					
Laboratory ID:	03-148-12					
Arsenic	3.3	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	ND	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	ND	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	ND	10	EPA 200.8	4-4-19	4-9-19	
Lead	ND	1.0	EPA 200.8	4-4-19	4-9-19	
Mercury	ND	0.50	EPA 7470A	4-4-19	4-8-19	
Selenium	ND	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	ND	10	EPA 200.8	4-4-19	4-9-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148B  
 Project: 1940901

**DISSOLVED METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0404F1					
Arsenic	<b>ND</b>	3.0	EPA 200.8	4-4-19	4-9-19	
Barium	<b>ND</b>	25	EPA 200.8	4-4-19	4-9-19	
Cadmium	<b>ND</b>	4.0	EPA 200.8	4-4-19	4-9-19	
Chromium	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
Lead	<b>ND</b>	1.0	EPA 200.8	4-4-19	4-9-19	
Selenium	<b>ND</b>	5.0	EPA 200.8	4-4-19	4-9-19	
Silver	<b>ND</b>	10	EPA 200.8	4-4-19	4-9-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0404F1					
Mercury	<b>ND</b>	0.50	EPA 7470A	4-4-19	4-8-19	



Date of Report: April 9, 2019  
 Samples Submitted: March 15, 2019  
 Laboratory Reference: 1903-148B  
 Project: 1940901

**DISSOLVED METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-161-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	44.8	44.2	NA	NA	NA	1	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	ND	ND	NA	NA	NA	NA	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-061-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	03-161-01									
	MS	MSD	MS	MSD	MS	MSD				
Arsenic	83.8	82.8	80.0	80.0	ND	105	104	75-125	1	20
Barium	120	124	80.0	80.0	44.8	95	99	75-125	3	20
Cadmium	74.0	75.8	80.0	80.0	ND	93	95	75-125	2	20
Chromium	74.8	73.6	80.0	80.0	ND	94	92	75-125	2	20
Lead	78.8	81.2	80.0	80.0	ND	99	102	75-125	3	20
Selenium	92.0	98.6	80.0	80.0	ND	115	123	75-125	7	20
Silver	78.2	78.4	80.0	80.0	ND	98	98	75-125	0	20

Laboratory ID:	03-061-01									
Mercury	10.8	11.1	12.5	12.5	ND	86	89	75-125	3	20

**SPIKE BLANK**

Laboratory ID:	SB0404F1									
Arsenic	78.4		80.0		N/A	98		85-115		
Barium	77.4		80.0		N/A	97		85-115		
Cadmium	74.2		80.0		N/A	93		85-115		
Chromium	74.0		80.0		N/A	93		85-115		
Lead	77.4		80.0		N/A	97		85-115		
Selenium	78.6		80.0		N/A	98		85-115		
Silver	74.0		80.0		N/A	93		85-115		

Laboratory ID:	SB0404F1									
Mercury	10.8		12.5		N/A	86		80-120		





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference



# Sample Custody Record

Samples Shipped to: Onsite



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

1 of 2

JOB 1940901 LAB NUMBER 03-148

PROJECT NAME Mercer Mega Block

HART CROWSER CONTACT Ray Jensen

SAMPLED BY:

HFCRA Metals

DISSOLVED METALS

% MOISTURE

NO. OF CONTAINERS

OBSERVATIONS/COMMENTS/  
COMPOSITING INSTRUCTIONS

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX													
1	MBPP7-5.0		3/8/19	1158	soil	X												
	<del>MBPP6-15.0</del>																	
2	MBPP8-15.0		3/8/19	0915		X												
3	MBGW9-10.0		3/13/19	1355		X												
4	MBGW10-10.0		3/13/19	0900		X												
5	MBGW9-6W		3/13/19	1615	water	X	X	(X)										
6	MBGW10-6W		3/13/19	1115	water	X	X	(X)										
7	MBGW5-6W		3/11/19	1300		X	X	(X)										
8	MBGW11-6W		3/12/19	1443		X	X	(X)										
9	MBGW11-5.0		3/12/19	0913	soil	X												
10	HMW21B-7.5		3/12/19	1140	soil	X												
11	MBGW6-6W		3/14/19	1620	water	X	X	(X)										

\*LAB FILTER

RELINQUISHED BY <u>[Signature]</u>	DATE <u>3/15/19</u>	RECEIVED BY <u>[Signature]</u>	DATE <u>3/15/19</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  (X) Added 4/2/19. DB (STA)	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>[Signature]</u>	TIME <u>1230</u>	SIGNATURE <u>[Signature]</u>	TIME <u>1230</u>		SAMPLE RECEIPT INFORMATION
PRINT NAME <u>[Name]</u>		PRINT NAME <u>[Name]</u>			CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
COMPANY <u>[Company]</u>		COMPANY <u>[Company]</u>			GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: _____ STORAGE LOCATION: _____	TEMPERATURE _____
SIGNATURE	TIME	SIGNATURE	TIME		SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
PRINT NAME		PRINT NAME			TURNAROUND TIME:
COMPANY		COMPANY			<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS OTHER _____
See Lab Work Order No. _____ for Other Contract Requirements					

White to Lab Yellow to Project Manager Pink to Sample Custodian

# Sample Custody Record

Samples Shipped to: Onsite



2 of 2

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER <u>03-148</u>						REQUESTED ANALYSIS DISCOWED PCBs METALS * MOISTURE NO. OF CONTAINERS										OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
PROJECT NAME <u>Mercer MegaBlock</u>																				
HART CROWSER CONTACT <u>Roy Jensen</u>																				
SAMPLED BY:																				
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
12	MBGW13-GW		3/14/19	1140	water	X	X													
13	DPP3-GW		3/15/19	1615	water	X	X													
14	MBGW6-10		3/14/19	1320	soil	X														
*LAB FILTER																				
RELINQUISHED BY		DATE		RECEIVED BY		DATE		SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:										TOTAL NUMBER OF CONTAINERS		
SIGNATURE		TIME		SIGNATURE		TIME												SAMPLE RECEIPT INFORMATION		
PRINT NAME		TIME		PRINT NAME		TIME		CUSTODY SEALS:												
COMPANY		TIME		COMPANY		TIME		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT												
RELINQUISHED BY		DATE		RECEIVED BY		DATE		COOLER NO.:                      STORAGE LOCATION:										TURNAROUND TIME:		
SIGNATURE		TIME		SIGNATURE		TIME												<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____		
PRINT NAME		TIME		PRINT NAME		TIME		See Lab Work Order No. _____ for Other Contract Requirements												
COMPANY		TIME		COMPANY		TIME														

White to Lab    Yellow to Project Manager    Pink to Sample Custodian



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

April 2, 2019

Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott, Suite 600  
Seattle, WA 98121

Re: Analytical Data for Project 1940901  
Laboratory Reference No. 1903-216

Dear Roy:

Enclosed are the analytical results and associated quality control data for samples submitted on March 25, 2019.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 2, 2019  
Samples Submitted: March 25, 2019  
Laboratory Reference: 1903-216  
Project: 1940901

### Case Narrative

Samples were collected on March 20, 21 and 22, 2019 and received by the laboratory on March 25, 2019. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.



Date of Report: April 2, 2019  
 Samples Submitted: March 25, 2019  
 Laboratory Reference: 1903-216  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>HMW-1S-GW</b>					
Laboratory ID:	03-216-01					
Arsenic	<b>14</b>	3.3	EPA 200.8	3-29-19	3-29-19	
Barium	<b>83</b>	28	EPA 200.8	3-29-19	3-29-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-29-19	3-29-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	
Lead	<b>2.7</b>	1.1	EPA 200.8	3-29-19	3-29-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-28-19	3-28-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-29-19	3-29-19	
Silver	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	

<b>Client ID:</b>	<b>DMW-1S-GW-21</b>					
Laboratory ID:	03-216-02					
Arsenic	<b>8.1</b>	3.3	EPA 200.8	3-29-19	3-29-19	
Barium	<b>38</b>	28	EPA 200.8	3-29-19	3-29-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-29-19	3-29-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-29-19	3-29-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-28-19	3-28-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-29-19	3-29-19	
Silver	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	

<b>Client ID:</b>	<b>DMW-1S-GW-22</b>					
Laboratory ID:	03-216-03					
Arsenic	<b>8.3</b>	3.3	EPA 200.8	3-29-19	3-29-19	
Barium	<b>40</b>	28	EPA 200.8	3-29-19	3-29-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-29-19	3-29-19	
Chromium	<b>14</b>	11	EPA 200.8	3-29-19	3-29-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-29-19	3-29-19	
Mercury	<b>ND</b>	0.50	EPA 7470A	3-28-19	3-28-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-29-19	3-29-19	
Silver	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	



Date of Report: April 2, 2019  
 Samples Submitted: March 25, 2019  
 Laboratory Reference: 1903-216  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A  
 METHOD BLANK QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>METHOD BLANK</b>						
Laboratory ID:	MB0329WM1					
Arsenic	<b>ND</b>	3.3	EPA 200.8	3-29-19	3-29-19	
Barium	<b>ND</b>	28	EPA 200.8	3-29-19	3-29-19	
Cadmium	<b>ND</b>	4.4	EPA 200.8	3-29-19	3-29-19	
Chromium	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	
Lead	<b>ND</b>	1.1	EPA 200.8	3-29-19	3-29-19	
Selenium	<b>ND</b>	5.6	EPA 200.8	3-29-19	3-29-19	
Silver	<b>ND</b>	11	EPA 200.8	3-29-19	3-29-19	
<b>METHOD BLANK</b>						
Laboratory ID:	MB0328W2					
Mercury	<b>ND</b>	0.50	EPA 7470A	3-28-19	3-28-19	



Date of Report: April 2, 2019  
 Samples Submitted: March 25, 2019  
 Laboratory Reference: 1903-216  
 Project: 1940901

**TOTAL METALS  
 EPA 200.8/7470A  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
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**DUPLICATE**

Laboratory ID: 03-106-06

	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	NA	20
Barium	ND	ND	NA	NA	NA	NA	NA	20
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	ND	ND	NA	NA	NA	NA	NA	20
Selenium	ND	ND	NA	NA	NA	NA	NA	20
Silver	ND	ND	NA	NA	NA	NA	NA	20

Laboratory ID: 03-240-01

Mercury	ND	ND	NA	NA	NA	NA	NA	20
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**MATRIX SPIKES**

Laboratory ID: 03-106-06

	MS	MSD	MS	MSD		MS	MSD			
Arsenic	110	111	111	111	ND	99	100	75-125	1	20
Barium	121	122	111	111	ND	109	110	75-125	1	20
Cadmium	106	105	111	111	ND	95	95	75-125	1	20
Chromium	103	102	111	111	ND	93	92	75-125	0	20
Lead	102	103	111	111	ND	92	93	75-125	0	20
Selenium	111	107	111	111	ND	100	96	75-125	4	20
Silver	115	108	111	111	ND	104	98	75-125	6	20

Laboratory ID: 03-240-01

Mercury	6.33	6.38	6.25	6.25	ND	101	102	75-125	1	20
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**SPIKE BLANK**

Laboratory ID: SB0329WM1

Arsenic	115		111		N/A	103		85-115		
Barium	111		111		N/A	100		85-115		
Cadmium	112		111		N/A	101		85-115		
Chromium	104		111		N/A	94		85-115		
Lead	110		111		N/A	99		85-115		
Selenium	119		111		N/A	107		85-115		
Silver	116		111		N/A	105		85-115		

Laboratory ID: SB0328W2

Mercury	6.20		6.25		N/A	99		80-120		
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Date of Report: April 2, 2019  
 Samples Submitted: March 25, 2019  
 Laboratory Reference: 1903-216  
 Project: 1940901

**TOTAL SUSPENDED SOLIDS  
 SM 2540D**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>HMW-1S-GW</b>					
Laboratory ID:	03-216-01					
Total Suspended Solids	<b>180</b>	4.0	SM 2540D	3-26-19	3-27-19	

<b>Client ID:</b>	<b>DMW-1S-GW-21</b>					
Laboratory ID:	03-216-02					
Total Suspended Solids	<b>31</b>	4.0	SM 2540D	3-26-19	3-27-19	

<b>Client ID:</b>	<b>DMW-1S-GW-22</b>					
Laboratory ID:	03-216-03					
Total Suspended Solids	<b>48</b>	4.0	SM 2540D	3-26-19	3-27-19	



Date of Report: April 2, 2019  
 Samples Submitted: March 25, 2019  
 Laboratory Reference: 1903-216  
 Project: 1940901

**TOTAL SUSPENDED SOLIDS  
 SM 2540D  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0326W1					
Total Suspended Solids	<b>ND</b>	4.0	SM 2540D	3-26-19	3-27-19	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-216-01							
	ORIG	DUP						
Total Suspended Solids	<b>183</b>	<b>183</b>	NA	NA	NA	NA	0	22

<b>SPIKE BLANK</b>								
Laboratory ID:	SB0326W1							
	SB	SB		SB				
Total Suspended Solids	<b>79.0</b>	100	NA	79	79-116	NA	NA	





### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference





March 20, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90305-1)* Project.

Samples were received on *March 05, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

AAL Job Number: C90305-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: Mercer Megablock  
Client Project Number: 19409-01  
Date received: 03/05/19

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results

8260B, µg/L	MTH BLK	LCS	MBGW2-30W	DGW4-GW
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/06/19	03/06/19	03/06/19
MTBE	5.0	nd		nd
Chloromethane	1.0	nd		nd
Vinyl chloride(*)	0.2	nd		nd
Bromomethane	1.0	nd		nd
Chloroethane	1.0	nd		nd
Trichlorofluoromethane	1.0	nd		nd
1,1-Dichloroethene	1.0	nd		nd
Methylene chloride	1.0	nd		nd
trans-1,2-Dichloroethene	1.0	nd		nd
1,1-Dichloroethane	1.0	nd		nd
2,2-Dichloropropane	1.0	nd		nd
cis-1,2-Dichloroethene	1.0	nd		nd
Chloroform	1.0	nd		nd
1,1,1-Trichloroethane	1.0	nd		nd
Carbontetrachloride	1.0	nd		nd
1,1-Dichloropropene	1.0	nd		nd
Benzene	1.0	nd	90%	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd
Trichloroethene	1.0	nd	90%	nd
1,2-Dichloropropane	1.0	nd		nd
Dibromomethane	1.0	nd		nd
Bromodichloromethane	1.0	nd		nd
cis-1,3-Dichloropropene	1.0	nd		nd
Toluene	1.0	nd	98%	nd
trans-1,3-Dichloropropene	1.0	nd		nd
1,1,2-Trichloroethane	1.0	nd		nd
Tetrachloroethene	1.0	nd		nd
1,3-Dichloropropane	1.0	nd		nd
Dibromochloromethane	1.0	nd		nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd
Chlorobenzene	1.0	nd	109%	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd
Ethylbenzene	1.0	nd		nd
Xylenes	1.0	nd		nd
Styrene	1.0	nd		nd
Bromoform	1.0	nd		nd
Isopropylbenzene	1.0	nd		nd
1,2,3-Trichloropropane	1.0	nd		nd
Bromobenzene	1.0	nd		nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd
n-Propylbenzene	1.0	nd		nd
2-Chlorotoluene	1.0	nd		nd
4-Chlorotoluene	1.0	nd		nd
1,3,5-Trimethylbenzene	1.0	nd		nd
tert-Butylbenzene	1.0	nd		nd
1,2,4-Trimethylbenzene	1.0	nd		nd
sec-Butylbenzene	1.0	nd		nd
1,3-Dichlorobenzene	1.0	nd		nd

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results

8260B, µg/L		MTH BLK	LCS	MBGW2-30W	DGW4-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/06/19	03/06/19	03/06/19	03/06/19
Isopropyltoluene	1.0	nd		nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd
n-Butylbenzene	1.0	nd		nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd
Naphthalene	1.0	nd		nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane		97%	99%	97%	95%
Toluene-d8		107%	97%	102%	102%
1,2-Dichloroethane-d4		98%	100%	104%	102%
4-Bromofluorobenzene		106%	111%	107%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results		MS	MSD	RPD
8260B, µg/L		MBGW2-30W	MBGW2-30W	MBGW2-30W
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/06/19	03/06/19	03/06/19

MTBE	5.0			
Chloromethane	1.0			
Vinyl chloride(*)	0.2			
Bromomethane	1.0			
Chloroethane	1.0			
Trichlorofluoromethane	1.0			
1,1-Dichloroethene	1.0			
Methylene chloride	1.0			
trans-1,2-Dichloroethene	1.0			
1,1-Dichloroethane	1.0			
2,2-Dichloropropane	1.0			
cis-1,2-Dichloroethene	1.0			
Chloroform	1.0			
1,1,1-Trichloroethane	1.0			
Carbontetrachloride	1.0			
1,1-Dichloropropene	1.0			
Benzene	1.0	87%	93%	7%
1,2-Dichloroethane(EDC)	1.0			
Trichloroethene	1.0	88%	99%	12%
1,2-Dichloropropane	1.0			
Dibromomethane	1.0			
Bromodichloromethane	1.0			
cis-1,3-Dichloropropene	1.0			
Toluene	1.0	94%	105%	11%
trans-1,3-Dichloropropene	1.0			
1,1,2-Trichloroethane	1.0			
Tetrachloroethene	1.0			
1,3-Dichloropropane	1.0			
Dibromochloromethane	1.0			
1,2-Dibromoethane (EDB)*	0.01			
Chlorobenzene	1.0	100%	111%	10%
1,1,1,2-Tetrachloroethane	1.0			
Ethylbenzene	1.0			
Xylenes	1.0			
Styrene	1.0			
Bromoform	1.0			
Isopropylbenzene	1.0			
1,2,3-Trichloropropane	1.0			
Bromobenzene	1.0			
1,1,2,2-Tetrachloroethane	1.0			
n-Propylbenzene	1.0			
2-Chlorotoluene	1.0			
4-Chlorotoluene	1.0			
1,3,5-Trimethylbenzene	1.0			
tert-Butylbenzene	1.0			
1,2,4-Trimethylbenzene	1.0			
sec-Butylbenzene	1.0			
1,3-Dichlorobenzene	1.0			

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results		MS	MSD	RPD
8260B, µg/L		MBGW2-30W	MBGW2-30W	MBGW2-30W
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/06/19	03/06/19	03/06/19

Isopropyltoluene	1.0
1,4-Dichlorobenzene	1.0
1,2-Dichlorobenzene	1.0
n-Butylbenzene	1.0
1,2-Dibromo-3-Chloropropane	1.0
1,2,4-Trichlorobenzene	1.0
Hexachloro-1,3-butadiene	1.0
Naphthalene	1.0
1,2,3-Trichlorobenzene	1.0

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	98%	96%
Toluene-d8	96%	93%
1,2-Dichloroethane-d4	101%	104%
4-Bromofluorobenzene	111%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results					Dupl
NWTPH-Dx, mg/L		MTH BLK	MBGW2-30W	DGW4-GW	DGW4-GW
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	03/05/19	03/05/19	03/05/19	03/05/19
Date analyzed	Limits	03/05/19	03/05/19	03/05/19	03/05/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	113%	113%	125%	121%
o-Terphenyl	128%	114%	125%	123%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90305-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/05/19

Analytical Results					Dupl
NWTPH-Gx		MTH BLK	MBGW2-30W	DGW4-GW	DGW4-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/06/19	03/06/19	03/06/19	03/06/19

<u>NWTPH-Gx, mg/L</u>					
Mineral spirits/Stoddard	0.10	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd

Surrogate recoveries:					
Trifluorotoluene		80%	74%	71%	74%
Bromofluorobenzene		96%	94%	91%	84%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%



March 22, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90306-4)* Project.

Samples were received on *March 06, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

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4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*

AAL Job Number: C90306-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/06, 12/19

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	DPP1-5	DPP1-10	DPP5-10	DPP5-17.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
MTBE	100	nd		nd	nd	nd	nd
Dichlorodifluoromethane	50	nd		nd	nd	nd	nd
Chloromethane	50	nd		nd	nd	nd	nd
Vinyl chloride	50	nd		nd	nd	nd	nd
Bromomethane	50	nd		nd	nd	nd	nd
Chloroethane	50	nd		nd	nd	nd	nd
Trichlorofluoromethane	50	nd		nd	nd	nd	nd
1,1-Dichloroethene	50	nd		nd	nd	nd	nd
Methylene chloride	20	nd		nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd		nd	nd	nd	nd
1,1-Dichloroethane	50	nd		nd	nd	nd	nd
2,2-Dichloropropane	50	nd		nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd		nd	nd	nd	nd
Chloroform	50	nd		nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd		nd	nd	nd	nd
Carbontetrachloride	50	nd		nd	nd	nd	nd
1,1-Dichloropropene	50	nd		nd	nd	nd	nd
Benzene	20	nd	89%	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd	nd	nd	nd
Trichloroethene	20	nd	87%	nd	nd	nd	nd
1,2-Dichloropropane	50	nd		nd	nd	nd	nd
Dibromomethane	50	nd		nd	nd	nd	nd
Bromodichloromethane	50	nd		nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd		nd	nd	nd	nd
Toluene	50	nd	98%	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd		nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd		nd	nd	nd	nd
Tetrachloroethene	50	nd		nd	nd	nd	nd
1,3-Dichloropropane	50	nd		nd	nd	nd	nd
Dibromochloromethane	20	nd		nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd	nd	nd	nd
Chlorobenzene	50	nd	108%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd	nd
Xylenes	50	nd		nd	nd	nd	nd
Styrene	50	nd		nd	nd	nd	nd
Bromoform	50	nd		nd	nd	nd	nd
Isopropylbenzene	50	nd		nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd		nd	nd	nd	nd
Bromobenzene	50	nd		nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd	nd	nd	nd
n-Propylbenzene	50	nd		nd	nd	nd	nd
2-Chlorotoluene	50	nd		nd	nd	nd	nd
4-Chlorotoluene	50	nd		nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd		nd	nd	nd	nd
tert-Butylbenzene	50	nd		nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd		nd	nd	nd	nd

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	DPP1-5	DPP1-10	DPP5-10	DPP5-17.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
sec-Butylbenzene	50	nd		nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd		nd	nd	nd	nd
Isopropyltoluene	50	nd		nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd		nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd		nd	nd	nd	nd
n-Butylbenzene	50	nd		nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd		nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd		nd	nd	nd	nd
Naphthalene	50	nd		nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd		nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	104%	94%	94%	91%	96%	94%
Toluene-d8	111%	95%	105%	93%	105%	103%
1,2-Dichloroethane-d4	99%	100%	105%	103%	102%	99%
4-Bromofluorobenzene	99%	104%	96%	112%	107%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

8260B, µg/kg		DPP5-20	DPP2-5	DPP2-10	DPP4-12.5	DPP4-17.5	DPP4-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
MTBE	100	nd	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd	nd

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

8260B, µg/kg		DPP5-20	DPP2-5	DPP2-10	DPP4-12.5	DPP4-17.5	DPP4-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	91%	97%	89%	90%	89%
Toluene-d8	98%	96%	110%	98%	97%	96%
1,2-Dichloroethane-d4	100%	102%	103%	105%	104%	104%
4-Bromofluorobenzene	116%	103%	98%	105%	104%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results		MS	MSD	RPD			
8260B, µg/kg		DPP4-20	DPP4-20	DPP4-20	MTH BLK	LCS	DPP4-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/15/19	03/15/19	03/15/19

MTBE	100				nd		nd
Dichlorodifluoromethane	50				nd		nd
Chloromethane	50				nd		nd
Vinyl chloride	50				nd		nd
Bromomethane	50				nd		nd
Chloroethane	50				nd		nd
Trichlorofluoromethane	50				nd		nd
1,1-Dichloroethene	50				nd		nd
Methylene chloride	20				nd		nd
trans-1,2-Dichloroethene	50				nd		nd
1,1-Dichloroethane	50				nd		nd
2,2-Dichloropropane	50				nd		nd
cis-1,2-Dichloroethene	50				nd		nd
Chloroform	50				nd		nd
1,1,1-Trichloroethane	50				nd		nd
Carbontetrachloride	50				nd		nd
1,1-Dichloropropene	50				nd		nd
Benzene	20	87%	91%	4%	nd	100%	nd
1,2-Dichloroethane(EDC)	20				nd		nd
Trichloroethene	20	87%	91%	4%	nd	86%	nd
1,2-Dichloropropane	50				nd		nd
Dibromomethane	50				nd		nd
Bromodichloromethane	50				nd		nd
cis-1,3-Dichloropropene	50				nd		nd
Toluene	50	99%	104%	5%	nd	98%	nd
trans-1,3-Dichloropropene	50				nd		nd
1,1,2-Trichloroethane	50				nd		nd
Tetrachloroethene	50				nd		nd
1,3-Dichloropropane	50				nd		nd
Dibromochloromethane	20				nd		nd
1,2-Dibromoethane (EDB)*	5				nd		nd
Chlorobenzene	50	107%	111%	3%	nd	100%	nd
1,1,1,2-Tetrachloroethane	50				nd		nd
Ethylbenzene	50				nd		nd
Xylenes	50				nd		nd
Styrene	50				nd		nd
Bromoform	50				nd		nd
Isopropylbenzene	50				nd		nd
1,2,3-Trichloropropane	50				nd		nd
Bromobenzene	50				nd		nd
1,1,2,2-Tetrachloroethane	50				nd		nd
n-Propylbenzene	50				nd		nd
2-Chlorotoluene	50				nd		nd
4-Chlorotoluene	50				nd		nd
1,3,5-Trimethylbenzene	50				nd		nd
tert-Butylbenzene	50				nd		nd
1,2,4-Trimethylbenzene	50				nd		nd

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results		MS	MSD	RPD			
<b>8260B, µg/kg</b>		<b>DPP4-20</b>	<b>DPP4-20</b>	<b>DPP4-20</b>	<b>MTH BLK</b>	<b>LCS</b>	<b>DPP4-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/15/19	03/15/19	03/15/19

sec-Butylbenzene	50				nd		nd
1,3-Dichlorobenzene	50				nd		nd
Isopropyltoluene	50				nd		nd
1,4-Dichlorobenzene	50				nd		nd
1,2-Dichlorobenzene	50				nd		nd
n-Butylbenzene	50				nd		nd
1,2-Dibromo-3-Chloropropane	50				nd		nd
1,2,4-Trichlorobenzene	50				nd		nd
Hexachloro-1,3-butadiene	50				nd		nd
Naphthalene	50				nd		nd
1,2,3-Trichlorobenzene	50				nd		nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	96%	92%		105%	94%	91%
Toluene-d8	96%	89%		123%	92%	96%
1,2-Dichloroethane-d4	106%	104%		96%	101%	99%
4-Bromofluorobenzene	106%	104%		99%	104%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

Dupl

NWTPH-Dx, mg/kg	MTH BLK	DPP5-10	DPP5-17.5	DPP5-20	DPP4-12.5	DPP4-20	DPP4-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	115%	122%	121%	124%	120%	121%	119%
o-Terphenyl	121%	125%	124%	124%	119%	124%	123%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MTH BLK</b>	<b>DPP1-5</b>	<b>DPP1-10</b>	<b>DPP5-10</b>	<b>DPP5-17.5</b>	<b>DPP2-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/06/19	03/06/19	03/06/19	03/06/19	03/06/19	03/06/19
Date analyzed	Limits	03/06/19	03/06/19	03/06/19	03/06/19	03/06/19	03/06/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	80%	78%	71%	71%	73%	78%
Bromofluorobenzene	96%	115%	107%	119%	119%	121%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90306-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/06,12/19

Analytical Results Dupl

<b>NWTPH-Gx</b>		<b>DPP2-10</b>	<b>DPP4-12.5</b>	<b>DPP4-20</b>	<b>DPP4-20</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/06/19	03/06/19	03/06/19	03/06/19
Date analyzed	Limits	03/06/19	03/06/19	03/06/19	03/06/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	76%	73%	78%	71%
Bromofluorobenzene	117%	115%	110%	119%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90306-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/06,12/19

<b>Moisture, SM2540B</b>	<b>DPP1-5</b>	<b>DPP1-10</b>	<b>DPP5-10</b>	<b>DPP5-17.5</b>	<b>DPP5-20</b>	<b>DPP2-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Moisture, %	17%	15%	15%	16%	16%	14%

AAL Job Number: C90306-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/06,12/19

<b>Moisture, SM2540B</b>	<b>DPP2-10</b>	<b>DPP4-12.5</b>	<b>DPP4-17.5</b>	<b>DPP4-20</b>	<b>DPP4-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Moisture, %	15%	13%	20%	31%	17%

# Sample Custody Record

1073



C90306-4 (1)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: AAL

JOB <u>19409-01</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Ray Jensen</u> SAMPLED BY: _____	REQUESTED ANALYSIS <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-G</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-DX</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals (PCPAS)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs</td> <td> </td> </tr> </table>	TPH-G	TPH-DX	VOCs	Metals (PCPAS)	PAHs																NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
TPH-G	TPH-DX	VOCs	Metals (PCPAS)	PAHs																			

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																
	DPP1-2.5	Soil																			
	DPP1-5					X	X														
	DPP1-7.5					X	X														
	DPP1-10					X	X														
	DPP1-12.5																				
	DPP1-15																				
	DPP1-17.5																				
	DPP1-20																				

VCA + metals of only

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>[Signature]</u>	3/10/19	<u>[Signature]</u>	03/06/19	Hold sample unless otherwise noted	SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME	2:00pm	RAY JENSEN	2:30pm		
COMPANY	AAL	AAL	AAL		
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:	STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME	See Lab Work Order No. _____	TURNAROUND TIME:
PRINT NAME		PRINT NAME		for Other Contract Requirements	<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
COMPANY		COMPANY			



# Sample Custody Record

Samples Shipped to: AHL

37.3



0903064 (S)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>19409-01</u> LAB NUMBER _____	REQUESTED ANALYSIS TPH-C- TPH-DX VCLs Metals (LEAD) PAH	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>MMB</u>			
HART CROWSER CONTACT <u>Roy Jensen</u>			
SAMPLED BY: _____			

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-C-	TPH-DX	VCLs	Metals (LEAD)	PAH	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS	
	DPP2-2.5				seil							VCA + metals only	
	DPP2-5					X	X						
	DPP2-7.5												
	DPP2-10					X	X						
	DPP2-15												
	DPP4-2.5												
	DPP4-10												
	DPP4-12.5					X	X	X					
	DPP4-15												
	DPP4-17.5							X					
	DPP4-20					X	X	X					
	DPP4-22.5												

RELINQUISHED BY <u>Roy Jensen</u> SIGNATURE <u>Roy Jensen</u> PRINT NAME <u>Hart Crowser</u> COMPANY	DATE <u>3/6/19</u> TIME <u>2 PM</u>	RECEIVED BY <u>V. Ivanov</u> SIGNATURE <u>V. Ivanov</u> PRINT NAME <u>AHL</u> COMPANY	DATE <u>03/06/19</u> TIME <u>2:30 pm</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS: <u>Hold samples unless otherwise noted</u>	TOTAL NUMBER OF CONTAINERS
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:	STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME	See Lab Work Order No. _____	for Other Contract Requirements
PRINT NAME		PRINT NAME		TURNAROUND TIME:	
COMPANY		COMPANY		<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____	

March 20, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90307-1)* Project.

Samples were received on *March 07, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

AAL Job Number: C90307-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: Mercer Megablock  
Client Project Number: 19409-01  
Date received: 03/07/19

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results

8260B, µg/L	MTH BLK	LCS	DPP3-GW	MBGW7-GW	MBGW1-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19	03/09/19	03/09/19
MTBE	5.0	nd		nd	nd
Chloromethane	1.0	nd		nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd
Bromomethane	1.0	nd		nd	nd
Chloroethane	1.0	nd		nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd
Methylene chloride	1.0	nd		nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd
cis-1,2-Dichloroethene	1.0	nd		nd	19
Chloroform	1.0	nd		nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd
Carbontetrachloride	1.0	nd		nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd
Benzene	1.0	nd	89%	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd
Trichloroethene	1.0	nd	87%	nd	3.9
1,2-Dichloropropane	1.0	nd		nd	nd
Dibromomethane	1.0	nd		nd	nd
Bromodichloromethane	1.0	nd		nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd
Toluene	1.0	nd	98%	nd	nd
trans-1,3-Dichloropropene	1.0	nd		nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd
Tetrachloroethene	1.0	nd		nd	9.5
1,3-Dichloropropane	1.0	nd		nd	nd
Dibromochloromethane	1.0	nd		nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd
Chlorobenzene	1.0	nd	108%	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd
Ethylbenzene	1.0	nd		nd	nd
Xylenes	1.0	nd		nd	nd
Styrene	1.0	nd		nd	nd
Bromoform	1.0	nd		nd	nd
Isopropylbenzene	1.0	nd		nd	nd
1,2,3-Trichloropropane	1.0	nd		nd	nd
Bromobenzene	1.0	nd		nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd
n-Propylbenzene	1.0	nd		nd	nd
2-Chlorotoluene	1.0	nd		nd	nd
4-Chlorotoluene	1.0	nd		nd	nd
1,3,5-Trimethylbenzene	1.0	nd		nd	nd
tert-Butylbenzene	1.0	nd		nd	nd
1,2,4-Trimethylbenzene	1.0	nd		nd	nd
sec-Butylbenzene	1.0	nd		nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results

8260B, µg/L		MTH BLK	LCS	DPP3-GW	MBGW7-GW	MBGW1-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Isopropyltoluene	1.0	nd		nd	nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd	nd
n-Butylbenzene	1.0	nd		nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd	nd
Naphthalene	1.0	nd		nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane		104%	94%	95%	93%	95%
Toluene-d8		111%	95%	104%	95%	102%
1,2-Dichloroethane-d4		99%	100%	99%	102%	99%
4-Bromofluorobenzene		99%	104%	104%	103%	109%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results		MS		MSD		RPD
8260B, µg/L	DGW3-GW	DGW1-GW	DPP3-GW	DPP3-GW	DPP3-GW	
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
MTBE	5.0	nd	nd			
Chloromethane	1.0	nd	nd			
Vinyl chloride(*)	0.2	nd	nd			
Bromomethane	1.0	nd	nd			
Chloroethane	1.0	nd	nd			
Trichlorofluoromethane	1.0	nd	nd			
1,1-Dichloroethene	1.0	nd	nd			
Methylene chloride	1.0	nd	nd			
trans-1,2-Dichloroethene	1.0	nd	nd			
1,1-Dichloroethane	1.0	nd	nd			
2,2-Dichloropropane	1.0	nd	nd			
cis-1,2-Dichloroethene	1.0	nd	nd			
Chloroform	1.0	nd	nd			
1,1,1-Trichloroethane	1.0	nd	nd			
Carbontetrachloride	1.0	nd	nd			
1,1-Dichloropropene	1.0	nd	nd			
Benzene	1.0	nd	nd	87%	91%	4%
1,2-Dichloroethane(EDC)	1.0	nd	nd			
Trichloroethene	1.0	nd	nd	87%	91%	4%
1,2-Dichloropropane	1.0	nd	nd			
Dibromomethane	1.0	nd	nd			
Bromodichloromethane	1.0	nd	nd			
cis-1,3-Dichloropropene	1.0	nd	nd			
Toluene	1.0	nd	nd	99%	104%	5%
trans-1,3-Dichloropropene	1.0	nd	nd			
1,1,2-Trichloroethane	1.0	nd	nd			
Tetrachloroethene	1.0	nd	nd			
1,3-Dichloropropane	1.0	nd	nd			
Dibromochloromethane	1.0	nd	nd			
1,2-Dibromoethane (EDB)*	0.01	nd	nd			
Chlorobenzene	1.0	nd	nd	107%	111%	3%
1,1,1,2-Tetrachloroethane	1.0	nd	nd			
Ethylbenzene	1.0	nd	8.0			
Xylenes	1.0	nd	14			
Styrene	1.0	nd	nd			
Bromoform	1.0	nd	nd			
Isopropylbenzene	1.0	nd	2.6			
1,2,3-Trichloropropane	1.0	nd	nd			
Bromobenzene	1.0	nd	nd			
1,1,2,2-Tetrachloroethane	1.0	nd	nd			
n-Propylbenzene	1.0	nd	3.7			
2-Chlorotoluene	1.0	nd	nd			
4-Chlorotoluene	1.0	nd	nd			
1,3,5-Trimethylbenzene	1.0	nd	6.5			
tert-Butylbenzene	1.0	nd	nd			
1,2,4-Trimethylbenzene	1.0	nd	12			
sec-Butylbenzene	1.0	nd	1.2			
1,3-Dichlorobenzene	1.0	nd	nd			

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results		MS	MSD	RPD	
8260B, µg/L	DGW3-GW	DGW1-GW	DPP3-GW	DPP3-GW	DPP3-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19	03/09/19	03/09/19
Isopropyltoluene	1.0	nd	1.7		
1,4-Dichlorobenzene	1.0	nd	nd		
1,2-Dichlorobenzene	1.0	nd	nd		
n-Butylbenzene	1.0	nd	nd		
1,2-Dibromo-3-Chloropropane	1.0	nd	nd		
1,2,4-Trichlorobenzene	1.0	nd	1.5		
Hexachloro-1,3-butadiene	1.0	nd	nd		
Naphthalene	1.0	nd	nd		
1,2,3-Trichlorobenzene	1.0	nd	nd		

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	97%	96%	96%	92%
Toluene-d8	106%	104%	96%	89%
1,2-Dichloroethane-d4	101%	99%	106%	104%
4-Bromofluorobenzene	104%	124%	106%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results

NWTPH-Dx, mg/L		MTH BLK	DPP3-GW	MBGW7-GW	MBGW1-GW	DGW3-GW
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	03/07/19	03/07/19	03/07/19	03/07/19	03/07/19
Date analyzed	Limits	03/07/19	03/07/19	03/07/19	03/07/19	03/07/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	122%	122%	118%	119%	117%
o-Terphenyl	128%	120%	120%	122%	119%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90307-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: Mercer Megablock  
Client Project Number: 19409-01  
Date received: 03/07/19

Analytical Results		Dupl	
NWTPH-Dx, mg/L		DGW1-GW	DGW1-GW
Matrix	Water	Water	Water
Date extracted	Reporting	03/07/19	03/07/19
Date analyzed	Limits	03/07/19	03/07/19
Kerosene/Jet fuel	0.20	nd	nd
Diesel/Fuel oil	0.20	nd	nd
Heavy oil	0.50	nd	nd

Surrogate recoveries:

Fluorobiphenyl	120%	127%
o-Terphenyl	120%	129%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
na - not analyzed  
Acceptable Recovery limits: 70% TO 130%  
Acceptable RPD limit: 30%

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results

NWTPH-Gx		MTH BLK	DPP3-GW	MBGW7-GW	MBGW1-GW	DGW3-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19

**NWTPH-Gx, mg/L**

Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	95%	104%	103%	103%	99%
Bromofluorobenzene	97%	99%	97%	103%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90307-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/07/19

Analytical Results		Dupl	RPD
<b>NWTPH-Gx</b>		<b>DGW1-GW</b>	<b>DGW1-GW</b>
Matrix	Water	Water	Water
Date analyzed	Reporting Limits	03/09/19	03/09/19

<b>NWTPH-Gx, mg/L</b>				
Mineral spirits/Stoddard	0.10	nd	nd	
Gasoline	0.10	0.34	0.37	8%

Surrogate recoveries:				
Trifluorotoluene		95%	101%	
Bromofluorobenzene		102%	97%	

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

# Sample Custody Record

Samples Shipped to: AAI



C90307-1

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1941090</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
PROJECT NAME <u>Mercer Megablock</u>						NWTPH-DX	NWTPH-GX	VOCs	PAHs											
HART CROWSER CONTACT <u>Roy Jensen</u>																				
SAMPLED BY: <u>CLR/MCS</u>																				
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
	<del>DW15-GW</del>	<del>Water</del>	<del>3/5/14</del>	<del>13:58</del>	<del>Water</del>															
	<del>DW12-GW</del>	<del>Water</del>	<del>3/5/14</del>	<del>13:58</del>	<del>Water</del>															
	<del>DW15-GW</del>	<del>Water</del>	<del>3/5/14</del>	<del>13:58</del>	<del>Water</del>															
	DPP3-GW	↓	3/5/14	16:15	↓	X	X	X												6
	MBGW7-GW	↓	3/6/14	10:40	↓	X	X	X												6
	MBGW1-GW	↓	3/6/14	13:00	↓	X	X	X												6
	DGW3-GW	↓	3/6/14	16:45	↓	X	X	X												6
	DGW2-GW	↓	3/6/14	12:20	↓	X	X	X												6
RELINQUISHED BY			DATE	RECEIVED BY			DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:										TOTAL NUMBER OF CONTAINERS		
SIGNATURE <u>Mike Shaljiun</u>			3/6/14	SIGNATURE <u>V. F. Ivanov</u>			03/07/14											SAMPLE RECEIPT INFORMATION		
PRINT NAME			TIME	PRINT NAME			TIME											CUSTODY SEALS:		
COMPANY				COMPANY														<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT		
RELINQUISHED BY			DATE	RECEIVED BY			DATE	COOLER NO.:				STORAGE LOCATION:						TURNAROUND TIME:		
SIGNATURE			TIME	SIGNATURE			TIME											<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____		
PRINT NAME				PRINT NAME				See Lab Work Order No. _____												
COMPANY				COMPANY				for Other Contract Requirements												

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

March 20, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90309-3)* Project.

Samples were received on *March 09, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

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4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*

AAL Job Number: C90309-3  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: Mercer Megablock  
Client Project Number: 19409-01  
Date received: 03/09/17

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results

8260B, µg/L		MTH BLK	LCS	DGW2	MBGW3	MBPP5	MBGW16
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19
MTBE	5.0	nd		nd	nd	nd	nd
Chloromethane	1.0	nd		nd	nd	nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd	nd	nd
Bromomethane	1.0	nd		nd	nd	nd	nd
Chloroethane	1.0	nd		nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd	nd	nd
Methylene chloride	1.0	nd		nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd		nd	4.8	nd	nd
Chloroform	1.0	nd		nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd	nd	nd
Carbontetrachloride	1.0	nd		nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd	nd	nd
Benzene	1.0	nd	88%	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd	nd	nd
Trichloroethene	1.0	nd	88%	nd	7.4	nd	nd
1,2-Dichloropropane	1.0	nd		nd	nd	nd	nd
Dibromomethane	1.0	nd		nd	nd	nd	nd
Bromodichloromethane	1.0	nd		nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd	nd	nd
Toluene	1.0	nd	100%	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd		nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd	nd	nd
Tetrachloroethene	1.0	nd		nd	35	2.9	nd
1,3-Dichloropropane	1.0	nd		nd	nd	nd	nd
Dibromochloromethane	1.0	nd		nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd	nd	nd
Chlorobenzene	1.0	nd	102%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd	nd	nd
Ethylbenzene	1.0	nd		nd	nd	nd	nd
Xylenes	1.0	nd		nd	nd	nd	nd
Styrene	1.0	nd		nd	nd	nd	nd
Bromoform	1.0	nd		nd	nd	nd	nd
Isopropylbenzene	1.0	nd		nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd		nd	nd	nd	nd
Bromobenzene	1.0	nd		nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd	nd	nd
n-Propylbenzene	1.0	nd		nd	nd	nd	nd
2-Chlorotoluene	1.0	nd		nd	nd	nd	nd
4-Chlorotoluene	1.0	nd		nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd		nd	nd	nd	nd
tert-Butylbenzene	1.0	nd		nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd		nd	nd	nd	nd
sec-Butylbenzene	1.0	nd		nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd	nd	nd

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results

8260B, µg/L		MTH BLK	LCS	DGW2	MBGW3	MBPP5	MBGW16
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19
Isopropyltoluene	1.0	nd		nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd	nd	nd
n-Butylbenzene	1.0	nd		nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd	nd	nd
Naphthalene	1.0	nd		nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	101%	94%	96%	93%	92%	93%
Toluene-d8	114%	96%	101%	98%	98%	93%
1,2-Dichloroethane-d4	97%	102%	98%	99%	99%	99%
4-Bromofluorobenzene	103%	108%	102%	110%	111%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results		MS	MSD	RPD
8260B, µg/L		MBGW16	MBGW16	MBGW16
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/11/19	03/11/19	03/11/19

MTBE	5.0			
Chloromethane	1.0			
Vinyl chloride(*)	0.2			
Bromomethane	1.0			
Chloroethane	1.0			
Trichlorofluoromethane	1.0			
1,1-Dichloroethene	1.0			
Methylene chloride	1.0			
trans-1,2-Dichloroethene	1.0			
1,1-Dichloroethane	1.0			
2,2-Dichloropropane	1.0			
cis-1,2-Dichloroethene	1.0			
Chloroform	1.0			
1,1,1-Trichloroethane	1.0			
Carbontetrachloride	1.0			
1,1-Dichloropropene	1.0			
Benzene	1.0	91%	77%	17%
1,2-Dichloroethane(EDC)	1.0			
Trichloroethene	1.0	90%	76%	16%
1,2-Dichloropropane	1.0			
Dibromomethane	1.0			
Bromodichloromethane	1.0			
cis-1,3-Dichloropropene	1.0			
Toluene	1.0	99%	88%	12%
trans-1,3-Dichloropropene	1.0			
1,1,2-Trichloroethane	1.0			
Tetrachloroethene	1.0			
1,3-Dichloropropane	1.0			
Dibromochloromethane	1.0			
1,2-Dibromoethane (EDB)*	0.01			
Chlorobenzene	1.0	112%	96%	15%
1,1,1,2-Tetrachloroethane	1.0			
Ethylbenzene	1.0			
Xylenes	1.0			
Styrene	1.0			
Bromoform	1.0			
Isopropylbenzene	1.0			
1,2,3-Trichloropropane	1.0			
Bromobenzene	1.0			
1,1,2,2-Tetrachloroethane	1.0			
n-Propylbenzene	1.0			
2-Chlorotoluene	1.0			
4-Chlorotoluene	1.0			
1,3,5-Trimethylbenzene	1.0			
tert-Butylbenzene	1.0			
1,2,4-Trimethylbenzene	1.0			
sec-Butylbenzene	1.0			
1,3-Dichlorobenzene	1.0			

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results		MS	MSD	RPD
<b>8260B, µg/L</b>		<b>MBGW16</b>	<b>MBGW16</b>	<b>MBGW16</b>
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/11/19	03/11/19	03/11/19

Isopropyltoluene	1.0			
1,4-Dichlorobenzene	1.0			
1,2-Dichlorobenzene	1.0			
n-Butylbenzene	1.0			
1,2-Dibromo-3-Chloropropane	1.0			
1,2,4-Trichlorobenzene	1.0			
Hexachloro-1,3-butadiene	1.0			
Naphthalene	1.0			
1,2,3-Trichlorobenzene	1.0			

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	88%	89%
Toluene-d8	88%	87%
1,2-Dichloroethane-d4	100%	100%
4-Bromofluorobenzene	99%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results

Dupl

NWTPH-Dx, mg/L		MTH BLK	DGW2	MBGW3	MBGW14	MBPP5	MBGW16	MBGW16
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Date analyzed	Limits	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19	03/09/19
Kerosene/Jet fuel	0.20	nd						
Diesel/Fuel oil	0.20	nd						
Heavy oil	0.50	nd						

Surrogate recoveries:

Fluorobiphenyl	119%	122%	128%	121%	129%	125%	128%
o-Terphenyl	125%	129%	125%	124%	130%	128%	124%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: Mercer Megablock  
 Client Project Number: 19409-01  
 Date received: 03/09/17

Analytical Results							Dupl
NWTPH-Gx		MTH BLK	DGW2	MBGW3	MBPP5	MBGW16	MBGW16
Matrix	Water	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19	03/11/19

<u>NWTPH-Gx, mg/L</u>							
Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd	nd	nd

Surrogate recoveries:							
Trifluorotoluene		121%	98%	102%	111%	103%	105%
Bromofluorobenzene		99%	103%	106%	109%	108%	104%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%



March 22, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90309-4)* Project.

Samples were received on *March 09, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

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4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*

AAL Job Number: C90309-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/09,12/19

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MTH BLK	LCS
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/12/19	03/12/19	03/15/19	03/15/19
Date analyzed	Limits	03/14/19	03/14/19	03/12/19	03/12/19	03/15/19	03/15/19
MTBE	100	nd		nd		nd	
Dichlorodifluoromethane	50	nd		nd		nd	
Chloromethane	50	nd		nd		nd	
Vinyl chloride	50	nd		nd		nd	
Bromomethane	50	nd		nd		nd	
Chloroethane	50	nd		nd		nd	
Trichlorofluoromethane	50	nd		nd		nd	
1,1-Dichloroethene	50	nd		nd		nd	
Methylene chloride	20	nd		nd		nd	
trans-1,2-Dichloroethene	50	nd		nd		nd	
1,1-Dichloroethane	50	nd		nd		nd	
2,2-Dichloropropane	50	nd		nd		nd	
cis-1,2-Dichloroethene	50	nd		nd		nd	
Chloroform	50	nd		nd		nd	
1,1,1-Trichloroethane	50	nd		nd		nd	
Carbontetrachloride	50	nd		nd		nd	
1,1-Dichloropropene	50	nd		nd		nd	
Benzene	20	nd	96%	nd	93%	nd	100%
1,2-Dichloroethane(EDC)	20	nd		nd		nd	
Trichloroethene	20	nd	95%	nd	93%	nd	86%
1,2-Dichloropropane	50	nd		nd		nd	
Dibromomethane	50	nd		nd		nd	
Bromodichloromethane	50	nd		nd		nd	
cis-1,3-Dichloropropene	50	nd		nd		nd	
Toluene	50	nd	103%	nd	97%	nd	98%
trans-1,3-Dichloropropene	50	nd		nd		nd	
1,1,2-Trichloroethane	50	nd		nd		nd	
Tetrachloroethene	50	nd		nd		nd	
1,3-Dichloropropane	50	nd		nd		nd	
Dibromochloromethane	20	nd		nd		nd	
1,2-Dibromoethane (EDB)*	5	nd		nd		nd	
Chlorobenzene	50	nd	109%	nd	106%	nd	100%
1,1,1,2-Tetrachloroethane	50	nd		nd		nd	
Ethylbenzene	50	nd		nd		nd	
Xylenes	50	nd		nd		nd	
Styrene	50	nd		nd		nd	
Bromoform	50	nd		nd		nd	
Isopropylbenzene	50	nd		nd		nd	
1,2,3-Trichloropropane	50	nd		nd		nd	
Bromobenzene	50	nd		nd		nd	
1,1,2,2-Tetrachloroethane	50	nd		nd		nd	
n-Propylbenzene	50	nd		nd		nd	
2-Chlorotoluene	50	nd		nd		nd	
4-Chlorotoluene	50	nd		nd		nd	
1,3,5-Trimethylbenzene	50	nd		nd		nd	
tert-Butylbenzene	50	nd		nd		nd	
1,2,4-Trimethylbenzene	50	nd		nd		nd	

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MTH BLK	LCS
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/12/19	03/12/19	03/15/19	03/15/19
Date analyzed	Limits	03/14/19	03/14/19	03/12/19	03/12/19	03/15/19	03/15/19
sec-Butylbenzene	50	nd		nd		nd	
1,3-Dichlorobenzene	50	nd		nd		nd	
Isopropyltoluene	50	nd		nd		nd	
1,4-Dichlorobenzene	50	nd		nd		nd	
1,2-Dichlorobenzene	50	nd		nd		nd	
n-Butylbenzene	50	nd		nd		nd	
1,2-Dibromo-3-Chloropropane	50	nd		nd		nd	
1,2,4-Trichlorobenzene	50	nd		nd		nd	
Hexachloro-1,3-butadiene	50	nd		nd		nd	
Naphthalene	50	nd		nd		nd	
1,2,3-Trichlorobenzene	50	nd		nd		nd	

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	96%	92%	92%	90%	105%	94%
Toluene-d8	103%	90%	99%	88%	123%	92%
1,2-Dichloroethane-d4	99%	98%	99%	102%	96%	101%
4-Bromofluorobenzene	105%	99%	99%	99%	99%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBGW1-5	MBGW1-12.5	MBGW1-17.5	MBGW1-25
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBGW1-5	MBGW1-12.5	MBGW1-17.5	MBGW1-25
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	88%	87%	87%	85%
Toluene-d8	89%	92%	91%	93%
1,2-Dichloroethane-d4	105%	99%	99%	101%
4-Bromofluorobenzene	90%	110%	112%	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBGW1-30	MBPP4-2.5	MBPP4-10	MBPP4-15	MBPP4-17
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBGW1-30	MBPP4-2.5	MBPP4-10	MBPP4-15	MBPP4-17
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	85%	84%	84%	88%	88%
Toluene-d8	86%	98%	98%	93%	94%
1,2-Dichloroethane-d4	95%	99%	99%	99%	96%
4-Bromofluorobenzene	110%	100%	100%	113%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>8260B, µg/kg</b>		<b>MBPP4-18</b>	<b>MBGW16-10</b>	<b>MBGW16-15</b>	<b>MBGW16-30</b>	<b>DPP6-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/14/19	03/12/19	03/12/19	03/12/19	03/12/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBPP4-18	MBGW16-10	MBGW16-15	MBGW16-30	DPP6-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/14/19	03/12/19	03/12/19	03/12/19	03/12/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	89%	85%	87%	90%
Toluene-d8	101%	92%	92%	95%	97%
1,2-Dichloroethane-d4	97%	97%	99%	100%	97%
4-Bromofluorobenzene	104%	100%	107%	115%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>8260B, µg/kg</b>		<b>DPP6-7.5</b>	<b>DPP6-12.5</b>	<b>DPP6-17.5</b>	<b>DGW4-5</b>	<b>DGW4-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		DPP6-7.5	DPP6-12.5	DPP6-17.5	DGW4-5	DGW4-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	92%	84%	88%	88%	89%
Toluene-d8	98%	90%	94%	94%	94%
1,2-Dichloroethane-d4	101%	101%	97%	99%	98%
4-Bromofluorobenzene	108%	108%	100%	102%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		DGW4-15	DGW4-20	DGW4-35	DGW4-50	MBPP5-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/15/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/15/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		DGW4-15	DGW4-20	DGW4-35	DGW4-50	MBPP5-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/15/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/15/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	92%	95%	93%	87%
Toluene-d8	93%	95%	90%	98%	93%
1,2-Dichloroethane-d4	100%	90%	92%	99%	97%
4-Bromofluorobenzene	104%	93%	94%	98%	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBPP5-15	MBPP5-20	MBPP5-25	MBGW3-10	MBGW3-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/14/19	03/14/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/14/19	03/14/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

8260B, µg/kg		MBPP5-15	MBPP5-20	MBPP5-25	MBGW3-10	MBGW3-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/14/19	03/14/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/14/19	03/14/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	97%	90%	84%	84%	90%
Toluene-d8	101%	95%	87%	93%	94%
1,2-Dichloroethane-d4	98%	99%	101%	99%	99%
4-Bromofluorobenzene	101%	109%	101%	101%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

MS

8260B, µg/kg		MBGW2-10	MBGW3-26/25	DGW2-5	DGW2-10	MBPP4-2.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/15/19	03/12/19	03/12/19	03/14/19
Date analyzed	Limits	03/14/19	03/15/19	03/12/19	03/12/19	03/14/19
MTBE	100	nd	nd	nd	nd	
Dichlorodifluoromethane	50	nd	nd	nd	nd	
Chloromethane	50	nd	nd	nd	nd	
Vinyl chloride	50	nd	nd	nd	nd	
Bromomethane	50	nd	nd	nd	nd	
Chloroethane	50	nd	nd	nd	nd	
Trichlorofluoromethane	50	nd	nd	nd	nd	
1,1-Dichloroethene	50	nd	nd	nd	nd	
Methylene chloride	20	nd	nd	nd	nd	
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	
1,1-Dichloroethane	50	nd	nd	nd	nd	
2,2-Dichloropropane	50	nd	nd	nd	nd	
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	
Chloroform	50	nd	nd	nd	nd	
1,1,1-Trichloroethane	50	nd	nd	nd	nd	
Carbontetrachloride	50	nd	nd	nd	nd	
1,1-Dichloropropene	50	nd	nd	nd	nd	
Benzene	20	nd	nd	nd	nd	90%
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	
Trichloroethene	20	nd	nd	nd	nd	84%
1,2-Dichloropropane	50	nd	nd	nd	nd	
Dibromomethane	50	nd	nd	nd	nd	
Bromodichloromethane	50	nd	nd	nd	nd	
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	
Toluene	50	nd	nd	nd	nd	89%
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	
1,1,2-Trichloroethane	50	nd	nd	nd	nd	
Tetrachloroethene	50	nd	74	nd	nd	
1,3-Dichloropropane	50	nd	nd	nd	nd	
Dibromochloromethane	20	nd	nd	nd	nd	
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	
Chlorobenzene	50	nd	nd	nd	nd	97%
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	
Ethylbenzene	50	nd	nd	nd	nd	
Xylenes	50	nd	nd	nd	nd	
Styrene	50	nd	nd	nd	nd	
Bromoform	50	nd	nd	nd	nd	
Isopropylbenzene	50	nd	nd	nd	nd	
1,2,3-Trichloropropane	50	nd	nd	nd	nd	
Bromobenzene	50	nd	nd	nd	nd	
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	
n-Propylbenzene	50	nd	nd	nd	nd	
2-Chlorotoluene	50	nd	nd	nd	nd	
4-Chlorotoluene	50	nd	nd	nd	nd	
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	
tert-Butylbenzene	50	nd	nd	nd	nd	
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

MS

8260B, µg/kg		MBGW2-10	MBGW3-26/25	DGW2-5	DGW2-10	MBPP4-2.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/15/19	03/12/19	03/12/19	03/14/19
Date analyzed	Limits	03/14/19	03/15/19	03/12/19	03/12/19	03/14/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	84%	85%	93%	93%
Toluene-d8	104%	86%	94%	104%	98%
1,2-Dichloroethane-d4	99%	97%	98%	99%	97%
4-Bromofluorobenzene	95%	97%	108%	100%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		MSD	RPD	MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBPP4-2.5</b>	<b>MBPP4-2.5</b>	<b>DGW2-10</b>	<b>DGW2-10</b>	<b>DGW2-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/14/19	03/14/19	03/12/19	03/12/19	03/12/19

MTBE	100					
Dichlorodifluoromethane	50					
Chloromethane	50					
Vinyl chloride	50					
Bromomethane	50					
Chloroethane	50					
Trichlorofluoromethane	50					
1,1-Dichloroethene	50					
Methylene chloride	20					
trans-1,2-Dichloroethene	50					
1,1-Dichloroethane	50					
2,2-Dichloropropane	50					
cis-1,2-Dichloroethene	50					
Chloroform	50					
1,1,1-Trichloroethane	50					
Carbontetrachloride	50					
1,1-Dichloropropene	50					
Benzene	20	105%	16%	102%	90%	12%
1,2-Dichloroethane(EDC)	20					
Trichloroethene	20	94%	11%	96%	88%	9%
1,2-Dichloropropane	50					
Dibromomethane	50					
Bromodichloromethane	50					
cis-1,3-Dichloropropene	50					
Toluene	50	103%	15%	103%	92%	11%
trans-1,3-Dichloropropene	50					
1,1,2-Trichloroethane	50					
Tetrachloroethene	50					
1,3-Dichloropropane	50					
Dibromochloromethane	20					
1,2-Dibromoethane (EDB)*	5					
Chlorobenzene	50	117%	19%	109%	101%	8%
1,1,1,2-Tetrachloroethane	50					
Ethylbenzene	50					
Xylenes	50					
Styrene	50					
Bromoform	50					
Isopropylbenzene	50					
1,2,3-Trichloropropane	50					
Bromobenzene	50					
1,1,2,2-Tetrachloroethane	50					
n-Propylbenzene	50					
2-Chlorotoluene	50					
4-Chlorotoluene	50					
1,3,5-Trimethylbenzene	50					
tert-Butylbenzene	50					
1,2,4-Trimethylbenzene	50					

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		MSD	RPD	MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBPP4-2.5</b>	<b>MBPP4-2.5</b>	<b>DGW2-10</b>	<b>DGW2-10</b>	<b>DGW2-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/14/19	03/14/19	03/12/19	03/12/19	03/12/19

sec-Butylbenzene	50
1,3-Dichlorobenzene	50
Isopropyltoluene	50
1,4-Dichlorobenzene	50
1,2-Dichlorobenzene	50
n-Butylbenzene	50
1,2-Dibromo-3-Chloropropane	50
1,2,4-Trichlorobenzene	50
Hexachloro-1,3-butadiene	50
Naphthalene	50
1,2,3-Trichlorobenzene	50

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	91%	101%
Toluene-d8	85%	88%	101%
1,2-Dichloroethane-d4	104%	96%	104%
4-Bromofluorobenzene	101%	103%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBGW3-25</b>	<b>MBGW3-25</b>	<b>MBGW3-25</b>
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19

MTBE	100			
Dichlorodifluoromethane	50			
Chloromethane	50			
Vinyl chloride	50			
Bromomethane	50			
Chloroethane	50			
Trichlorofluoromethane	50			
1,1-Dichloroethene	50			
Methylene chloride	20			
trans-1,2-Dichloroethene	50			
1,1-Dichloroethane	50			
2,2-Dichloropropane	50			
cis-1,2-Dichloroethene	50			
Chloroform	50			
1,1,1-Trichloroethane	50			
Carbontetrachloride	50			
1,1-Dichloropropene	50			
Benzene	20	95%	86%	9%
1,2-Dichloroethane(EDC)	20			
Trichloroethene	20	90%	103%	14%
1,2-Dichloropropane	50			
Dibromomethane	50			
Bromodichloromethane	50			
cis-1,3-Dichloropropene	50			
Toluene	50	91%	90%	1%
trans-1,3-Dichloropropene	50			
1,1,2-Trichloroethane	50			
Tetrachloroethene	50			
1,3-Dichloropropane	50			
Dibromochloromethane	20			
1,2-Dibromoethane (EDB)*	5			
Chlorobenzene	50	103%	97%	6%
1,1,1,2-Tetrachloroethane	50			
Ethylbenzene	50			
Xylenes	50			
Styrene	50			
Bromoform	50			
Isopropylbenzene	50			
1,2,3-Trichloropropane	50			
Bromobenzene	50			
1,1,2,2-Tetrachloroethane	50			
n-Propylbenzene	50			
2-Chlorotoluene	50			
4-Chlorotoluene	50			
1,3,5-Trimethylbenzene	50			
tert-Butylbenzene	50			
1,2,4-Trimethylbenzene	50			

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBGW3-25</b>	<b>MBGW3-25</b>	<b>MBGW3-25</b>
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19

sec-Butylbenzene	50
1,3-Dichlorobenzene	50
Isopropyltoluene	50
1,4-Dichlorobenzene	50
1,2-Dichlorobenzene	50
n-Butylbenzene	50
1,2-Dibromo-3-Chloropropane	50
1,2,4-Trichlorobenzene	50
Hexachloro-1,3-butadiene	50
Naphthalene	50
1,2,3-Trichlorobenzene	50

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	98%	95%
Toluene-d8	102%	103%
1,2-Dichloroethane-d4	98%	95%
4-Bromofluorobenzene	99%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		Dupl				
NWTPH-Dx, mg/kg		MTH BLK	MTH BLK	MBGW1-5	MBGW1-5	MBGW1-17.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/19/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/19/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	114%	89%	125%	124%	123%
o-Terphenyl	126%	125%	129%	128%	130%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW1-25	MBPP4-10	MBPP4-18	MBGW16-10	MBGW16-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	121%	120%	113%	118%	120%
o-Terphenyl	123%	125%	120%	125%	125%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		Dupl				
NWTPH-Dx, mg/kg		MBGW16-30	MBGW16-30	MBPP1-20	MBPP1-25	MBPP2-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:						
Fluorobiphenyl		121%	121%	122%	123%	122%
o-Terphenyl		125%	125%	126%	128%	126%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

NWTPH-Dx, mg/kg		MBPP3-10	MBPP3-20	MBPP5-10	MBPP5-15	DPP6-7.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	120%	125%	123%	127%	120%
o-Terphenyl	125%	129%	128%	128%	123%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

NWTPH-Dx, mg/kg		DPP6-12.5	DPP6-17.5	DGW4-5	DGW4-15	DGW4-20	DGW4-35
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	119%	120%	119%	119%	122%	121%
o-Terphenyl	122%	124%	123%	124%	126%	115%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

NWTPH-Dx, mg/kg		DGW4-50	MBGW3-10	MBGW3-12.5	MBGW3-25	MBGW3-26
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19	03/12/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	120%	115%	126%	122%	122%
o-Terphenyl	123%	114%	130%	127%	127%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW2-10	DGW2-5	DGW2-10	MBGW14-10	MBGW14-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/19/19	03/19/19	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/19/19	03/19/19	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	125%	78%	84%	122%	125%
o-Terphenyl	130%	123%	99%	126%	130%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		Dupl	
NWTPH-Dx, mg/kg		MBGW14-30	MBGW14-30
Matrix	Soil	Soil	Soil
Date extracted	Reporting	03/12/19	03/12/19
Date analyzed	Limits	03/12/19	03/12/19
Kerosene/Jet fuel	20	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd
Heavy oil	50	nd	nd

Surrogate recoveries:

Fluorobiphenyl	123%	122%
o-Terphenyl	127%	122%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MTH BLK</b>	<b>MTH BLK</b>	<b>MBGW1-5</b>	<b>MBGW1-17.5</b>	<b>MBGW1-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/13/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/13/19	03/14/19	03/14/19	03/14/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	95%	109%	83%	86%	87%
Bromofluorobenzene	90%	98%	105%	108%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBPP4-10</b>	<b>MBPP4-18</b>	<b>MBGW16-10</b>	<b>MBGW16-20</b>	<b>MBGW16-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/13/19	03/13/19	03/13/19	03/13/19	03/13/19
Date analyzed	Limits	03/13/19	03/13/19	03/13/19	03/13/19	03/13/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	93%	85%	86%	101%	75%
Bromofluorobenzene	94%	107%	98%	120%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBPP5-10</b>	<b>MBPP5-15</b>	<b>MBPP5-20</b>	<b>MBPP5-25</b>	<b>DPP6-7.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	91%	103%	103%	103%	74%
Bromofluorobenzene	114%	114%	114%	114%	108%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>DPP6-12.5</b>	<b>DPP6-17.5</b>	<b>DGW4-5</b>	<b>DGW4-15</b>	<b>DGW4-20</b>	<b>DGW4-35</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/13/19	03/13/19	03/13/19	03/13/19
Date analyzed	Limits	03/14/19	03/14/19	03/13/19	03/13/19	03/13/19	03/13/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	99%	85%	109%	97%	105%	109%
Bromofluorobenzene	110%	116%	110%	109%	109%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

<b>NWTPH-Gx</b>		<b>DGW4-50</b>	<b>MBGW3-10</b>	<b>MBGW3-26</b>	<b>MBGW2-10</b>	<b>DGW2-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/13/19	03/14/19	03/13/19	03/13/19	03/13/19
Date analyzed	Limits	03/13/19	03/14/19	03/13/19	03/13/19	03/13/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	107%	75%	90%	83%	87%
Bromofluorobenzene	104%	104%	95%	108%	119%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		Dupl		Dupl
<b>NWTPH-Gx</b>		<b>DGW2-5</b>	<b>DGW2-10</b>	<b>DGW2-10</b>
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/13/19	03/13/19	03/13/19
Date analyzed	Limits	03/13/19	03/13/19	03/13/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd
Gasoline	5.0	nd	nd	nd

**Surrogate recoveries:**

Trifluorotoluene	88%	82%	83%
Bromofluorobenzene	118%	86%	87%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results

PAH (8270 sim), mg/kg		MTH BLK	LCS	MBGW1-25	MBGW3-26
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19
1-Methylnaphthalene	0.10	nd		nd	nd
2-Methylnaphthalene	0.10	nd		nd	nd
Naphthalene	0.10	nd		nd	nd
Acenaphthylene	0.10	nd		nd	nd
Acenaphthene	0.10	nd	106%	nd	nd
Fluorene	0.10	nd		nd	nd
Phenanthrene	0.10	nd		nd	nd
Anthracene	0.10	nd		nd	nd
Fluoranthene	0.10	nd		nd	nd
Pyrene	0.10	nd	113%	nd	nd
Benzo(a)anthracene	0.10	nd		nd	nd
Chrysene	0.10	nd		nd	nd
Benzo(b)fluoranthene	0.10	nd		nd	nd
Benzo(k)fluoranthene	0.10	nd		nd	nd
Benzo(a)pyrene	0.10	nd		nd	nd
Indeno(1,2,3-cd)pyrene	0.10	nd		nd	nd
Dibenzo(ah)anthracene	0.10	nd		nd	nd
Benzo(ghi)perylene	0.10	nd		nd	nd
Surrogate recoveries:					
2-Fluorobiphenyl		96%	110%	99%	140%
o-Terphenyl		99%	96%	101%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

Analytical Results		MS	MSD	RPD
PAH (8270 sim), mg/kg		MBGW2-30	MBGW2-30	MBGW2-30
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19
1-Methylnaphthalene	0.10			
2-Methylnaphthalene	0.10			
Naphthalene	0.10			
Acenaphthylene	0.10			
Acenaphthene	0.10	92%	93%	1%
Fluorene	0.10			
Phenanthrene	0.10			
Anthracene	0.10			
Fluoranthene	0.10			
Pyrene	0.10	106%	103%	3%
Benzo(a)anthracene	0.10			
Chrysene	0.10			
Benzo(b)fluoranthene	0.10			
Benzo(k)fluoranthene	0.10			
Benzo(a)pyrene	0.10			
Indeno(1,2,3-cd)pyrene	0.10			
Dibenzo(ah)anthracene	0.10			
Benzo(ghi)perylene	0.10			
<b>Surrogate recoveries:</b>				
2-Fluorobiphenyl		107%	105%	
o-Terphenyl		97%	99%	

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>MBGW1-5</b>	<b>MBGW1-12.5</b>	<b>MBGW1-17.5</b>	<b>MBGW1-25</b>	<b>MBGW1-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	13%	12%	14%	14%	14%

AAL Job Number: C90309-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>MBPP4-2.5</b>	<b>MBPP4-10</b>	<b>MBPP4-15</b>	<b>MBPP4-17</b>	<b>MBPP4-18</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	12%	12%	14%	14%	13%

AAL Job Number: C90309-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>MBGW16-10</b>	<b>MBGW16-15</b>	<b>MBGW16-30</b>	<b>DPP6-5</b>	<b>DPP6-7.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	14%	13%	14%	14%	13%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>DPP6-12.5</b>	<b>DPP6-17.5</b>	<b>DGW4-5</b>	<b>DGW4-10</b>	<b>DGW4-15</b>	<b>DGW4-20</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	13%	14%	11%	12%	12%	13%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>DGW4-35</b>	<b>DGW4-50</b>	<b>MBPP5-10</b>	<b>MBPP5-15</b>	<b>MBPP5-20</b>	<b>MBPP5-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	14%	13%	13%	12%	11%	13%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>MBGW3-10</b>	<b>MBGW3-25</b>	<b>MBGW2-10</b>	<b>MBGW3-26/25</b>	<b>DGW2-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	14%	14%	14%	19%	12%

AAL Job Number: C90309-4  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>DGW2-10</b>	<b>MBPP1-20</b>	<b>MBPP1-25</b>	<b>MBPP2-20</b>	<b>MBPP3-10</b>	<b>MBPP3-20</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	13%	16%	18%	16%	15%	16%

AAL Job Number: C90309-4  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/09,12/19

<b>Moisture, SM2540B</b>	<b>MBPP5-10</b>	<b>MBPP5-15</b>	<b>MBGW14-10</b>	<b>MBGW14-20</b>	<b>MBGW14-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Moisture, %	15%	14%	15%	17%	18%

# Sample Custody Record

Samples Shipped to: \_\_\_\_\_



C90309-4 (1)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>19409-01</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS					
PROJECT NAME <u>MMIB</u>						TPH-G	TPH-Dx	VOCs	PAMS													
HART CROWSER CONTACT <u>Roy Jensen</u>																						
SAMPLED BY: _____																						
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																	
	MB6W1-5		3/6/19	10:45	Soil	X	X	X														
	MB6W1-12.5							X														
	MB6W1-17.5			10:58		X	X	X														
	MB6M1-25			11:10		X	X	X	X													
	MB6M1-30							X														
	MBPP4-2.5		3/7/19	15:24				X													2VOA	
	MBPP4-5		3/7/19	15:33																	2VOA	
	MBPP4-10		3/7/19	15:34		X	X	X													2VOA	
	MBPP4-15		3/7/19	15:43				X													2VOA	
	MBPP4-16		3/7/19	16:03		X	X	X													2VOA	
	MBPP4-17		3/7/19	15:49				X													2VOA	

RELINQUISHED BY <u>Roy Jensen</u>	DATE 3/9/19	RECEIVED BY <u>V. Hansen</u>	DATE 03/09/19	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  10°C	TOTAL NUMBER OF CONTAINERS  _____
SIGNATURE <u>Roy Jensen</u>	TIME 8 AM	SIGNATURE <u>V. Hansen</u>	TIME 10:00		SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT  TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
PRINT NAME <u>RJ</u>		PRINT NAME <u>V. Hansen</u>			
COMPANY <u>RCM</u>		COMPANY <u>AHL</u>			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: _____ STORAGE LOCATION: _____	
SIGNATURE	TIME	SIGNATURE	TIME	See Lab Work Order No. _____ for Other Contract Requirements	
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

Samples Shipped to: \_\_\_\_\_



C910309-4 (2) (3)

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>19409-01</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Roy Jensen</u> SAMPLED BY: _____						REQUESTED ANALYSIS TPH-G TH-DX VOCs										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
	MBGW16-2.5		3/9/19	9:50	soil															
	MBGW16-5			10:00																
	MBGW16-7.5			10:10																
	MBGW16-10			10:15		X	X	X												
	MBGW16-12.5			10:25																
	MBGW16-15			10:30		X	X	X												
	MBGW16-20			10:50																
	MBGW16-25			11:10																
	MBGW16-30			11:30		X	X	X												
	MBGW16-35			11:46																
RELINQUISHED BY <i>Roy Jensen</i> SIGNATURE ROY JENSEN PRINT NAME RC COMPANY		DATE 3/9/19 TIME 800 AM	RECEIVED BY <i>V. K...</i> SIGNATURE VAL... PRINT NAME VAL... COMPANY		DATE 03/09/19 TIME 10:00	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS: See Lab Work Order No. _____ for Other Contract Requirements										TOTAL NUMBER OF CONTAINERS 1 4oz glass 2 VOA's				
RELINQUISHED BY SIGNATURE PRINT NAME COMPANY		DATE TIME	RECEIVED BY SIGNATURE PRINT NAME COMPANY		DATE TIME	COOLER NO.: _____ STORAGE LOCATION: _____ TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____														

# Sample Custody Record

Samples Shipped to: \_\_\_\_\_



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office 206.324.9530 • Fax 206.328.5581

JOB <u>19409-01</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Royt</u> SAMPLED BY: _____						REQUESTED ANALYSIS												NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
						TPH-G	TPH-Dx	VOCs	PAHs													
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	X	X	X	X													
	MBPPI-20		3/5/19		soil	X	X															
	MBPPI-25		↓																			
	<del>MBPP1-10</del>		3/5/19				X															
	MBPP2-27.5		↓																			
	MBPP3-10		3/6/19				X															
	MBPP4-20		↓				X															
	MBPP5-10		3/7/19				X															
	MBPP5-15		↓				X															
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:						TOTAL NUMBER OF CONTAINERS										
SIGNATURE		TIME	SIGNATURE		TIME																	
PRINT NAME			PRINT NAME																			
COMPANY			COMPANY																			
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.: _____ STORAGE LOCATION: _____						TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____										
SIGNATURE		TIME	SIGNATURE		TIME																	
PRINT NAME			PRINT NAME																			
COMPANY			COMPANY																			

C90312-1

(4)

1 of 1

# Sample Custody Record

Samples Shipped to: Advanced Analytical Labs



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
PROJECT NAME <u>Mercer-Meyer Block</u>						TPH-G	TPH-Dx	VCLs	CATS												
HART CROWSER CONTACT <u>Ray Jensen</u>																					
SAMPLED BY: _____																					

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-G	TPH-Dx	VCLs	CATS										
<del>PP4</del>	<del>DP45-20</del>	<del>v</del>	<del>3/4/19</del>	<del>15:45</del>	<del>soil</del>			X											
<del>PP4</del>	<del>DP44-17.5</del>	<del>v</del>	<del>3/4/19</del>	<del>11:30</del>				X											
	DGW4-35		3/4/19			X	X	X											
	DGW2-10		3/4/19	13:40		X	X	X											
	DGW2-5		3/4/19	13:28		X	X	X											
	DGW4-20		3/4/19			X	X	X											
	DGW4-15		3/4/19			X	X	X											
	DGW4-5		3/4/19			X	X	X											
	DGW4-50		3/4/19			X	X	X											
	<del>MBGW3-7.5</del>		<del>3/7/19</del>			X	X			VGL (see C90314-1)									
	MBGW3-10.0		3/7/19			X	X												
	<del>MBGW3-12.5</del>		<del>3/7/19</del>			X	X			VGL (see C90314-1)									

RELINQUISHED BY <u>[Signature]</u>	DATE 3/11/19	RECEIVED BY <u>V. Haller</u>	DATE 03/12/19	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>[Signature]</u>	TIME 8 pm	SIGNATURE <u>V. Haller</u>	TIME 13:20		
PRINT NAME <u>[Name]</u>		PRINT NAME <u>V. Haller</u>			
COMPANY		COMPANY			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: _____ STORAGE LOCATION: _____	TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

See Lab Work Order No. \_\_\_\_\_  
for Other Contract Requirements





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# Sample Custody Record



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

JOB <u>19409-01</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Roy Jensen</u> SAMPLED BY: _____	REQUESTED ANALYSIS <table border="1" style="width:100%; height: 100px;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-G</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-Dx</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	TPH-G	TPH-Dx	VOCs	PAHs																		NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
TPH-G	TPH-Dx	VOCs	PAHs																					

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
	MBGW2-10		3/4/19	11:57	soil	X	X	X												
					S															
	MBGW3-26/25		3/7/19		soil	X	X	X	X											
	MBGW14-10				soil		X													
	MBGW14-15				↓		X													
	MBGW14-20				↓		X													
	MBGW14-30				↓		X													
	<del>MBGW7-5</del>		<del>3/4/19</del>	<del>13:27</del>	<del>soil</del>	<del>X</del>	<del>X</del>	<del>X</del>												
	<del>MBGW2-10</del>		<del>3/4/19</del>	<del>13:40</del>	<del>soil</del>	<del>X</del>	<del>X</del>	<del>X</del>												

} VFA (see page 4)

RELINQUISHED BY <u>[Signature]</u> SIGNATURE <u>Roy Jensen</u> PRINT NAME <u>MC</u> COMPANY	DATE <u>3/12/19</u> TIME <u>13:45</u>	RECEIVED BY <u>[Signature]</u> SIGNATURE <u>V. HARR</u> PRINT NAME <u>RAL</u> COMPANY	DATE <u>03/12/19</u> TIME <u>13:45</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements	TOTAL NUMBER OF CONTAINERS  SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT  TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
RELINQUISHED BY SIGNATURE PRINT NAME COMPANY	DATE TIME	RECEIVED BY SIGNATURE PRINT NAME COMPANY	DATE TIME	COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements	TOTAL NUMBER OF CONTAINERS  SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT  TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____

March 23, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90314-1)* Project.

Samples were received on *March 14, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

---

4078 148 Ave NE ■ Redmond, WA 98052

425.702-8571

*E-mail: aachemlab@yahoo.com*

AAL Job Number: C90314-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MTH BLK	LCS
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/16/19	03/16/19	03/18/19	03/18/19
Date analyzed	Limits	03/15/19	03/15/19	03/16/19	03/16/19	03/18/19	03/18/19
MTBE	100	nd		nd		nd	
Dichlorodifluoromethane	50	nd		nd		nd	
Chloromethane	50	nd		nd		nd	
Vinyl chloride	50	nd		nd		nd	
Bromomethane	50	nd		nd		nd	
Chloroethane	50	nd		nd		nd	
Trichlorofluoromethane	50	nd		nd		nd	
1,1-Dichloroethene	50	nd		nd		nd	
Methylene chloride	20	nd		nd		nd	
trans-1,2-Dichloroethene	50	nd		nd		nd	
1,1-Dichloroethane	50	nd		nd		nd	
2,2-Dichloropropane	50	nd		nd		nd	
cis-1,2-Dichloroethene	50	nd		nd		nd	
Chloroform	50	nd		nd		nd	
1,1,1-Trichloroethane	50	nd		nd		nd	
Carbontetrachloride	50	nd		nd		nd	
1,1-Dichloropropene	50	nd		nd		nd	
Benzene	20	nd	100%	nd	82%	nd	78%
1,2-Dichloroethane(EDC)	20	nd		nd		nd	
Trichloroethene	20	nd	86%	nd	80%	nd	75%
1,2-Dichloropropane	50	nd		nd		nd	
Dibromomethane	50	nd		nd		nd	
Bromodichloromethane	50	nd		nd		nd	
cis-1,3-Dichloropropene	50	nd		nd		nd	
Toluene	50	nd	98%	nd	91%	nd	92%
trans-1,3-Dichloropropene	50	nd		nd		nd	
1,1,2-Trichloroethane	50	nd		nd		nd	
Tetrachloroethene	50	nd		nd		nd	
1,3-Dichloropropane	50	nd		nd		nd	
Dibromochloromethane	20	nd		nd		nd	
1,2-Dibromoethane (EDB)*	5	nd		nd		nd	
Chlorobenzene	50	nd	100%	nd	99%	nd	99%
1,1,1,2-Tetrachloroethane	50	nd		nd		nd	
Ethylbenzene	50	nd		nd		nd	
Xylenes	50	nd		nd		nd	
Styrene	50	nd		nd		nd	
Bromoform	50	nd		nd		nd	
Isopropylbenzene	50	nd		nd		nd	
1,2,3-Trichloropropane	50	nd		nd		nd	
Bromobenzene	50	nd		nd		nd	
1,1,2,2-Tetrachloroethane	50	nd		nd		nd	
n-Propylbenzene	50	nd		nd		nd	
2-Chlorotoluene	50	nd		nd		nd	
4-Chlorotoluene	50	nd		nd		nd	
1,3,5-Trimethylbenzene	50	nd		nd		nd	
tert-Butylbenzene	50	nd		nd		nd	
1,2,4-Trimethylbenzene	50	nd		nd		nd	

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MTH BLK	LCS
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/16/19	03/16/19	03/18/19	03/18/19
Date analyzed	Limits	03/15/19	03/15/19	03/16/19	03/16/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd		nd		nd	
1,3-Dichlorobenzene	50	nd		nd		nd	
Isopropyltoluene	50	nd		nd		nd	
1,4-Dichlorobenzene	50	nd		nd		nd	
1,2-Dichlorobenzene	50	nd		nd		nd	
n-Butylbenzene	50	nd		nd		nd	
1,2-Dibromo-3-Chloropropane	50	nd		nd		nd	
1,2,4-Trichlorobenzene	50	nd		nd		nd	
Hexachloro-1,3-butadiene	50	nd		nd		nd	
Naphthalene	50	nd		nd		nd	
1,2,3-Trichlorobenzene	50	nd		nd		nd	

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	105%	94%	87%	85%	91%	86%
Toluene-d8	123%	92%	97%	84%	97%	83%
1,2-Dichloroethane-d4	96%	101%	97%	98%	96%	103%
4-Bromofluorobenzene	99%	104%	97%	96%	92%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DPP1-7.5	DPP1-20	DPP3-5	DPP3-15	DPP3-30	DMW1S-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	100	nd	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DPP1-7.5	DPP1-20	DPP3-5	DPP3-15	DPP3-30	DMW1S-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	80%	81%	88%	86%	84%	84%
Toluene-d8	84%	83%	99%	91%	90%	89%
1,2-Dichloroethane-d4	98%	98%	96%	98%	100%	94%
4-Bromofluorobenzene	104%	102%	100%	98%	101%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DMW1S-10	DMW1S-12.5	DMW1S-15	DMW1S-20	DGW1-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	53	2,100	120	nd	nd
Xylenes	50	71	4,400	200	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	1,500	120	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	110	3,200	280	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	190	6,200	760	nd	nd
tert-Butylbenzene	50	nd	105	nd	nd	nd
1,2,4-Trimethylbenzene	50	510	13,000	1,900	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DMW1S-10	DMW1S-12.5	DMW1S-15	DMW1S-20	DGW1-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
sec-Butylbenzene	50	71	1,900	250	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	120	3,200	480	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	180	820	580	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	79%	89%	79%	83%	80%
Toluene-d8	83%	94%	84%	86%	86%
1,2-Dichloroethane-d4	102%	109%	101%	99%	99%
4-Bromofluorobenzene	106%	C	109%	105%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DGW1-30	DGW1-10	DGW1-12.5	DGW1-15	DGW3-2.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/15/19	03/16/19	03/16/19	03/16/19	03/16/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DGW1-30	DGW1-10	DGW1-12.5	DGW1-15	DGW3-2.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/15/19	03/16/19	03/16/19	03/16/19	03/16/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	82%	79%	81%	84%	82%
Toluene-d8	84%	86%	82%	89%	88%
1,2-Dichloroethane-d4	97%	101%	98%	95%	99%
4-Bromofluorobenzene	97%	105%	94%	99%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DGW3-12.5	DGW3-15	DGW3-20	DGW3-25	DGW2-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	03/16/19	03/16/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DGW3-12.5	DGW3-15	DGW3-20	DGW3-25	DGW2-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	03/16/19	03/16/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	81%	82%	80%	83%	85%
Toluene-d8	90%	91%	85%	82%	92%
1,2-Dichloroethane-d4	98%	99%	98%	98%	98%
4-Bromofluorobenzene	99%	95%	101%	99%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg	DGW2-30	MBGW4-7.5	MBGW4-10	MBGW4-12.5	
Matrix	Soil	Soil	Soil	Soil	
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		DGW2-30	MBGW4-7.5	MBGW4-10	MBGW4-12.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	03/16/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	88%	81%	84%	80%
Toluene-d8	90%	83%	87%	84%
1,2-Dichloroethane-d4	97%	99%	98%	96%
4-Bromofluorobenzene	98%	103%	110%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW4-25	MBGW3-7.5	MBGW3-10	MBGW3-12.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	03/16/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW4-25	MBGW3-7.5	MBGW3-10	MBGW3-12.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/16/19	03/16/19	03/16/19
Date analyzed	Limits	03/16/19	03/16/19	03/16/19	03/16/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	80%	81%	79%	81%
Toluene-d8	83%	83%	85%	85%
1,2-Dichloroethane-d4	101%	98%	99%	98%
4-Bromofluorobenzene	82%	96%	108%	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW3-26	MBGW2-12.5	MBGW2-25	MBGW2-30
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/16/19	03/18/19	03/18/19	03/18/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW3-26	MBGW2-12.5	MBGW2-25	MBGW2-30
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/16/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/16/19	03/18/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	80%	80%	83%	85%
Toluene-d8	85%	86%	86%	90%
1,2-Dichloroethane-d4	98%	99%	98%	97%
4-Bromofluorobenzene	99%	98%	100%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW5-10	MBGW5-15	MBGW5-20	MBGW5-27.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW5-10	MBGW5-15	MBGW5-20	MBGW5-27.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	78%	82%	84%	85%
Toluene-d8	86%	87%	91%	92%
1,2-Dichloroethane-d4	103%	98%	99%	99%
4-Bromofluorobenzene	96%	94%	98%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW5-45	MPP5-25	MPP5-10	MPP5-17.5	MBGW7-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	260	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	470	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	3,400	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW5-45	MPP5-25	MPP5-10	MPP5-17.5	MBGW7-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	86%	91%	82%	92%	86%
Toluene-d8	95%	92%	91%	94%	96%
1,2-Dichloroethane-d4	98%	94%	95%	95%	94%
4-Bromofluorobenzene	100%	95%	97%	95%	100%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP6-10	MBPP6-15	MBPP6-20	MBPP6-25	MBPP6-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP6-10	MBPP6-15	MBPP6-20	MBPP6-25	MBPP6-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	72%	82%	82%	83%	81%
Toluene-d8	86%	90%	88%	89%	87%
1,2-Dichloroethane-d4	95%	99%	97%	98%	94%
4-Bromofluorobenzene	97%	110%	104%	97%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS			MSD	
8260B, µg/kg		MBPP7-5	MBPP7-15	MBPP7-23	MBGW2-25	MBGW2-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
MTBE	100	nd	nd	nd		
Dichlorodifluoromethane	50	nd	nd	nd		
Chloromethane	50	nd	nd	nd		
Vinyl chloride	50	nd	nd	nd		
Bromomethane	50	nd	nd	nd		
Chloroethane	50	nd	nd	nd		
Trichlorofluoromethane	50	nd	nd	nd		
1,1-Dichloroethene	50	nd	nd	nd		
Methylene chloride	20	nd	nd	nd		
trans-1,2-Dichloroethene	50	nd	nd	nd		
1,1-Dichloroethane	50	nd	nd	nd		
2,2-Dichloropropane	50	nd	nd	nd		
cis-1,2-Dichloroethene	50	nd	nd	nd		
Chloroform	50	nd	nd	nd		
1,1,1-Trichloroethane	50	nd	nd	nd		
Carbontetrachloride	50	nd	nd	nd		
1,1-Dichloropropene	50	nd	nd	nd		
Benzene	20	nd	nd	nd	83%	88%
1,2-Dichloroethane(EDC)	20	nd	nd	nd		
Trichloroethene	20	nd	nd	nd	82%	86%
1,2-Dichloropropane	50	nd	nd	nd		
Dibromomethane	50	nd	nd	nd		
Bromodichloromethane	50	nd	nd	nd		
cis-1,3-Dichloropropene	50	nd	nd	nd		
Toluene	50	nd	nd	nd	85%	99%
trans-1,3-Dichloropropene	50	nd	nd	nd		
1,1,2-Trichloroethane	50	nd	nd	nd		
Tetrachloroethene	50	nd	nd	nd		
1,3-Dichloropropane	50	nd	nd	nd		
Dibromochloromethane	20	nd	nd	nd		
1,2-Dibromoethane (EDB)*	5	nd	nd	nd		
Chlorobenzene	50	nd	nd	nd	97%	108%
1,1,1,2-Tetrachloroethane	50	nd	nd	nd		
Ethylbenzene	50	nd	nd	nd		
Xylenes	50	nd	nd	nd		
Styrene	50	nd	nd	nd		
Bromoform	50	nd	nd	nd		
Isopropylbenzene	50	nd	nd	nd		
1,2,3-Trichloropropane	50	nd	nd	nd		
Bromobenzene	50	nd	nd	nd		
1,1,2,2-Tetrachloroethane	50	nd	nd	nd		
n-Propylbenzene	50	nd	nd	nd		
2-Chlorotoluene	50	nd	nd	nd		
4-Chlorotoluene	50	nd	nd	nd		
1,3,5-Trimethylbenzene	50	nd	nd	nd		
tert-Butylbenzene	50	nd	nd	nd		
1,2,4-Trimethylbenzene	50	nd	nd	nd		

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS			MSD	
8260B, µg/kg		MBPP7-5	MBPP7-15	MBPP7-23	MBGW2-25	MBGW2-25
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
sec-Butylbenzene	50	nd	nd	nd		
1,3-Dichlorobenzene	50	nd	nd	nd		
Isopropyltoluene	50	nd	nd	nd		
1,4-Dichlorobenzene	50	nd	nd	nd		
1,2-Dichlorobenzene	50	nd	nd	nd		
n-Butylbenzene	50	nd	nd	nd		
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd		
1,2,4-Trichlorobenzene	50	nd	nd	nd		
Hexachloro-1,3-butadiene	50	nd	nd	nd		
Naphthalene	50	nd	nd	nd		
1,2,3-Trichlorobenzene	50	nd	nd	nd		

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	82%	85%	86%	91%	87%
Toluene-d8	85%	93%	95%	93%	83%
1,2-Dichloroethane-d4	97%	99%	97%	99%	98%
4-Bromofluorobenzene	101%	96%	98%	91%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		RPD	MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBGW2-25</b>	<b>MBPP7-23</b>	<b>MBPP7-23</b>	<b>MBPP7-23</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19

MTBE	100				
Dichlorodifluoromethane	50				
Chloromethane	50				
Vinyl chloride	50				
Bromomethane	50				
Chloroethane	50				
Trichlorofluoromethane	50				
1,1-Dichloroethene	50				
Methylene chloride	20				
trans-1,2-Dichloroethene	50				
1,1-Dichloroethane	50				
2,2-Dichloropropane	50				
cis-1,2-Dichloroethene	50				
Chloroform	50				
1,1,1-Trichloroethane	50				
Carbontetrachloride	50				
1,1-Dichloropropene	50				
Benzene	20	6%	86%	89%	4%
1,2-Dichloroethane(EDC)	20				
Trichloroethene	20	4%	79%	88%	10%
1,2-Dichloropropane	50				
Dibromomethane	50				
Bromodichloromethane	50				
cis-1,3-Dichloropropene	50				
Toluene	50	14%	89%	98%	10%
trans-1,3-Dichloropropene	50				
1,1,2-Trichloroethane	50				
Tetrachloroethene	50				
1,3-Dichloropropane	50				
Dibromochloromethane	20				
1,2-Dibromoethane (EDB)*	5				
Chlorobenzene	50	11%	100%	103%	3%
1,1,1,2-Tetrachloroethane	50				
Ethylbenzene	50				
Xylenes	50				
Styrene	50				
Bromoform	50				
Isopropylbenzene	50				
1,2,3-Trichloropropane	50				
Bromobenzene	50				
1,1,2,2-Tetrachloroethane	50				
n-Propylbenzene	50				
2-Chlorotoluene	50				
4-Chlorotoluene	50				
1,3,5-Trimethylbenzene	50				
tert-Butylbenzene	50				
1,2,4-Trimethylbenzene	50				

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		RPD	MS	MSD	RPD
<b>8260B, µg/kg</b>		<b>MBGW2-25</b>	<b>MBPP7-23</b>	<b>MBPP7-23</b>	<b>MBPP7-23</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19

sec-Butylbenzene	50
1,3-Dichlorobenzene	50
Isopropyltoluene	50
1,4-Dichlorobenzene	50
1,2-Dichlorobenzene	50
n-Butylbenzene	50
1,2-Dibromo-3-Chloropropane	50
1,2,4-Trichlorobenzene	50
Hexachloro-1,3-butadiene	50
Naphthalene	50
1,2,3-Trichlorobenzene	50

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	83%	90%
Toluene-d8	92%	85%
1,2-Dichloroethane-d4	99%	97%
4-Bromofluorobenzene	96%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	MTH BLK	MTH BLK	DPP1-7.5	DPP1-20	DPP3-5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/15/19	03/19/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/15/19	03/19/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	120%	109%	89%	122%	121%	122%
o-Terphenyl	121%	124%	125%	125%	123%	123%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		DPP3-30	DMW1S-5	DMW1S-10	DMW1S-12.5	DMW1S-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	124%	123%	124%	108%	128%
o-Terphenyl	126%	127%	126%	127%	126%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		DMW1S-20	DGW1-25	DGW1-10	DGW1-12.5	DGW1-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	121%	122%	124%	121%	121%
o-Terphenyl	126%	126%	125%	126%	126%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results						Dupl
NWTPH-Dx, mg/kg		DGW3-2.5	DGW3-12.5	DGW3-25	DGW2-30	DGW2-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	122%	120%	120%	121%	124%
o-Terphenyl	127%	121%	126%	126%	129%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW4-7.5	MBGW4-5	MBGW4-12.5	MBGW4-25	MBGW3-5.0
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/19/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/19/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	29	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	125%	126%	125%	121%	75%
o-Terphenyl	130%	130%	129%	125%	89%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW3-7.5	MBGW3-12.5	DPP2-5	DPP2-10	MBGW2-12.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/19/19	03/19/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	83%	77%	121%	121%	126%
o-Terphenyl	93%	87%	124%	123%	130%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results						Dupl
NWTPH-Dx, mg/kg		MBGW2-25	MBGW2-30	MBGW5-10	MBGW5-15	MBGW5-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/14/19	03/14/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	126%	127%	127%	120%	125%
o-Terphenyl	130%	127%	127%	129%	125%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Dx, mg/kg</b>		<b>MBGW5-27.5</b>	<b>MPP4-10</b>	<b>MBGW5-45</b>	<b>MPP5-25</b>	<b>MPP5-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	102%	101%	102%	90%	99%
o-Terphenyl	111%	109%	110%	90%	122%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl			
NWTPH-Dx, mg/kg		MBPP6-10	MBPP7-5	MBPP7-5	MBPP7-23
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/14/19	03/14/19	03/14/19
Date analyzed	Limits	03/15/19	03/14/19	03/14/19	03/14/19
Kerosene/Jet fuel	20	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	94%	90%	86%	86%
o-Terphenyl	102%	98%	95%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MTH BLK</b>	<b>MTH BLK</b>	<b>DPP3-5</b>	<b>DPP3-30</b>	<b>DMW1S-5</b>	<b>DMW1S-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/19/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/19/19	03/18/19	03/18/19	03/18/19	03/18/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd	29

Surrogate recoveries:

Trifluorotoluene	112%	116%	115%	121%	126%	114%
Bromofluorobenzene	98%	106%	98%	106%	125%	116%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>DMW1S-12.5</b>	<b>DMW1S-15</b>	<b>DMW1S-20</b>	<b>DGW1-25</b>	<b>DGW1-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	1,200	67	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	118%	84%	93%	96%	70%
Bromofluorobenzene	C	112%	107%	94%	87%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>DGW1-12.5</b>	<b>DGW1-15</b>	<b>DGW3-2.5</b>	<b>DGW3-12.5</b>	<b>DGW3-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/19/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/19/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	99%	92%	87%	98%	85%
Bromofluorobenzene	108%	96%	80%	99%	79%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>DGW2-30</b>	<b>MBGW4-7.5</b>	<b>MBGW4-12.5</b>	<b>MBGW4-25</b>	<b>MBGW3-26</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	106%	93%	111%	70%	86%
Bromofluorobenzene	106%	99%	125%	71%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBGW3-7.5</b>	<b>MBGW3-12.5</b>	<b>MBGW2-12.5</b>	<b>MBGW2-25</b>	<b>MBGW2-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	70%	72%	92%	85%	75%
Bromofluorobenzene	71%	78%	101%	93%	80%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl				
<b>NWTPH-Gx</b>		<b>MBGW2-30</b>	<b>MBGW5-10</b>	<b>MBGW5-15</b>	<b>MBGW5-27.5</b>	<b>MBGW5-45</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19

<b>NWTPH-Gx, mg/kg</b>						
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	98%	83%	86%	94%	99%
Bromofluorobenzene	97%	84%	88%	97%	117%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results Dupl

<b>NWTPH-Gx</b>		<b>MPP5-25</b>	<b>MPP5-10</b>	<b>MBPP6-10</b>	<b>MBPP7-5</b>	<b>MBPP7-23</b>	<b>MBPP7-23</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	74%	83%	77%	79%	71%	71%
Bromofluorobenzene	79%	87%	76%	79%	92%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%  
 Moisture, %

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

PAH (8270 sim), mg/kg		MTH BLK	LCS	DMW1S-15	DGW1-10	MBGW3-12.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
1-Methylnaphthalene	0.10	nd		nd	nd	nd
2-Methylnaphthalene	0.10	nd		nd	nd	nd
Naphthalene	0.10	nd		nd	nd	nd
Acenaphthylene	0.10	nd		nd	nd	nd
Acenaphthene	0.10	nd	106%	nd	nd	nd
Fluorene	0.10	nd		nd	nd	nd
Phenanthrene	0.10	nd		nd	nd	nd
Anthracene	0.10	nd		nd	nd	nd
Fluoranthene	0.10	nd		nd	nd	nd
Pyrene	0.10	nd	113%	nd	nd	nd
Benzo(a)anthracene	0.10	nd		nd	nd	nd
Chrysene	0.10	nd		nd	nd	nd
Benzo(b)fluoranthene	0.10	nd		nd	nd	nd
Benzo(k)fluoranthene	0.10	nd		nd	nd	nd
Benzo(a)pyrene	0.10	nd		nd	nd	nd
Indeno(1,2,3-cd)pyrene	0.10	nd		nd	nd	nd
Dibenzo(ah)anthracene	0.10	nd		nd	nd	nd
Benzo(ghi)perylene	0.10	nd		nd	nd	nd

Surrogate recoveries:

2-Fluorobiphenyl	96%	110%	122%	107%	127%
o-Terphenyl	99%	96%	97%	102%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS		MSD		RPD
PAH (8270 sim), mg/kg		MBGW2-25	MBGW2-30	MBGW2-30	MBGW2-30	MBGW2-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
Date analyzed	Limits	03/18/19	03/18/19	03/18/19	03/18/19	03/18/19
1-Methylnaphthalene	0.10	nd	nd			
2-Methylnaphthalene	0.10	nd	nd			
Naphthalene	0.10	nd	nd			
Acenaphthylene	0.10	nd	nd			
Acenaphthene	0.10	nd	nd	92%	93%	1%
Fluorene	0.10	nd	nd			
Phenanthrene	0.10	nd	nd			
Anthracene	0.10	nd	nd			
Fluoranthene	0.10	nd	nd			
Pyrene	0.10	nd	nd	106%	103%	3%
Benzo(a)anthracene	0.10	nd	nd			
Chrysene	0.10	nd	nd			
Benzo(b)fluoranthene	0.10	nd	nd			
Benzo(k)fluoranthene	0.10	nd	nd			
Benzo(a)pyrene	0.10	nd	nd			
Indeno(1,2,3-cd)pyrene	0.10	nd	nd			
Dibenzo(ah)anthracene	0.10	nd	nd			
Benzo(ghi)perylene	0.10	nd	nd			
<b>Surrogate recoveries:</b>						
2-Fluorobiphenyl		111%	102%	107%	105%	
o-Terphenyl		101%	98%	97%	99%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>DPP1-7.5</b>	<b>DPP1-20</b>	<b>DPP3-5</b>	<b>DPP3-15</b>	<b>DPP3-30</b>	<b>DMW1S-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	13%	14%	15%	16%	15%	14%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>DMW1S-10</b>	<b>DMW1S-12.5</b>	<b>DMW1S-15</b>	<b>DMW1S-20</b>	<b>DGW1-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	15%	14%	14%	15%	16%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>DGW1-30</b>	<b>DGW1-10</b>	<b>DGW1-12.5</b>	<b>DGW1-15</b>	<b>DGW3-2.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	14%	13%	14%	14%	15%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>DGW3-12.5</b>	<b>DGW3-15</b>	<b>DGW3-20</b>	<b>DGW3-25</b>	<b>DGW2-25</b>	<b>DGW2-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	15%	14%	14%	14%	17%	28%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW4-5</b>	<b>MBGW4-7.5</b>	<b>MBGW4-10</b>	<b>MBGW4-12.5</b>	<b>MBGW4-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	14%	13%	14%	15%	14%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW3-5</b>	<b>MBGW3-7.5</b>	<b>MBGW3-10</b>	<b>MBGW3-12.5</b>	<b>MBGW3-26</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	16%	17%	14%	15%	16%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>DPP2-5</b>	<b>DPP2-10</b>	<b>MBGW2-12.5</b>	<b>MBGW2-25</b>	<b>MBGW2-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	15%	15%	14%	16%	18%

AAL Job Number: C90314-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW5-10</b>	<b>MBGW5-15</b>	<b>MBGW5-20</b>	<b>MBGW5-27.5</b>	<b>MBGW5-45</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	13%	14%	14%	14%	13%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MPP5-25</b>	<b>MPP5-10</b>	<b>MPP5-17.5</b>	<b>MBGW7-30</b>	<b>MBPP6-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	14%	15%	16%	14%	14%

AAL Job Number: C90314-1  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBPP6-15</b>	<b>MBPP6-20</b>	<b>MBPP6-25</b>	<b>MBPP6-30</b>	<b>MBPP7-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/23/19	03/23/19	03/23/19	03/23/19	03/23/19
Moisture, %	15%	14%	13%	16%	14%

AAL Job Number: C90314-1  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBPP7-15</b>	<b>MBPP7-23</b>
Matrix	Soil	Soil
Date analyzed	03/23/19	03/23/19
Moisture, %	15%	18%

# Sample Custody Record

Samples Shipped to: Advanced Analytical Lab



C-903/4-1 ①

Lot 105

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER _____ PROJECT NAME <u>Merced Mesa Block</u> HART CROWSER CONTACT <u>Ray Jensen</u> SAMPLED BY: _____	REQUESTED ANALYSIS TPHG TPH-DX VOCs PAHs	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
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LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPHG	TPH-DX	VOCs	PAHs
	DPP1-7.5		3/4/19		soil	X	X		
	DPP1-20		3/4/19			X	X		
	DPP3-5		3/5/19			X	X	X	
	DPP3-15		3/5/19	1503				X	
	DPP3-30		3/5/19	1534		X	X	X	
	DMW15-5		3/5/19	0927		X	X	X	
	DMW15-10		3/5/19			X	X	X	
	DMW15-12.5		3/5/19	1004		X	X	X	
	DMW15-15		3/5/19			X	X	X	X
	DMW15-20		3/5/19			X	X	X	
	DGW1-25		3/6/19	1110		X	X	X	
	DGW1-30		3/6/19	1119				X	

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>Rebecca Diehl</u>	3/4/19	<u>HAL</u>	03/14/19	See Lab Work Order No. _____ for Other Contract Requirements	SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:	STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			



# Sample Custody Record

Samples Shipped to: Advanced Analytical Lab



3 of \_\_\_\_\_

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1740701</u> LAB NUMBER _____						REQUESTED ANALYSIS												NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS						
PROJECT NAME <u>Meteor Mega Black</u>						TPH-G	TPH-Dx	VOCs	PAHs																
HART CROWSER CONTACT <u>Ray Jensen</u>																									
SAMPLED BY: _____																									
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																				
	MBGW4-5.0		3/6/19	0732	soil		X																		
	MBGW4-7.5		3/6/19	0734		X	X	X																	
	MBGW4-10.0		3/6/19	0737				X																	
	MBGW4-12.5		3/6/19	0745		X	X	X																	
	<del>MBGW4-25</del>		<del>3/6/19</del>			X		X																	
	<del>MBGW4-25</del>		<del>3/6/19</del>			X	X	X																	
	<del>MBGW3-26</del>		<del>3/7/19</del>	<del>1330</del>		X		X																	
	MBGW3-5.0		3/7/19				X																		
	MBGW3-7.5		3/7/19			X	X	X																	
	MBGW3-10.0		3/7/19					X																	
	MBGW3-12.5		3/7/19			X	X	X	X																
	MBGW3-26.0		3/7/19			X		X																	

RELINQUISHED BY <u>[Signature]</u>	DATE 3/14/19	RECEIVED BY <u>[Signature]</u>	DATE 03/17/19	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>[Signature]</u>	TIME 10:30	SIGNATURE <u>[Signature]</u>	TIME 10:30	COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements	TURNAROUND TIME:  <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS      OTHER _____
PRINT NAME <u>HC</u>		PRINT NAME <u>HAL</u>			
COMPANY		COMPANY			
RELINQUISHED BY	DATE	RECEIVED BY	DATE		
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

# Sample Custody Record

Samples Shipped to: Advanced Analytical Lab



1 of 1

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER _____ PROJECT NAME <u>Merced Mega Block</u> HART CROWSER CONTACT <u>Ray Jensen</u> SAMPLED BY: _____	REQUESTED ANALYSIS <table border="1" style="width:100%; height: 100px; border-collapse: collapse;"> <tr> <td style="width: 5%;">TPH-C</td> <td style="width: 5%;">TPH-Dx</td> <td style="width: 5%;">VCS</td> <td style="width: 5%;">PARS</td> <td style="width: 5%;"></td> </tr> </table>	TPH-C	TPH-Dx	VCS	PARS																	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
TPH-C	TPH-Dx	VCS	PARS																				

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPH-C	TPH-Dx	VCS	PARS											
	DPP2-5		3/4/19		507		X													
	DPP2-10		3/4/19		507		X													
	MBGW2-12.5		3/4/19			X	X	X												
	MBGW2-25		3/4/19	1300		X	X	X	X											
	MBGW2-30		3/4/19	1326		X	X	X	X											
	MBGW5-10		3/11/19	1010		X	X	X												
	MBGW5-15		3/11/19	1025		X	X	X												
	MBGW5-20		3/11/19	1055				X												
	MBGW5-27.5		3/11/19	1122		X	X	X												
	<del>MPP4-10</del>		<del>3/7/19</del>				X													
	<del>MPP4-10</del>		<del>3/7/19</del>				X													
	MBGW5-45		3/11/19	1507	V	X	X	X												

VAT (see 090309-4)  
VAT

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>[Signature]</u>	3/14/19	<u>[Signature]</u>	03/14/19		
SIGNATURE	TIME	SIGNATURE	TIME		SAMPLE RECEIPT INFORMATION
<u>[Signature]</u>	1030	<u>[Signature]</u>	1030		CUSTODY SEALS:
PRINT NAME		PRINT NAME			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
COMPANY		COMPANY			GOOD CONDITION
					<input type="checkbox"/> YES <input type="checkbox"/> NO
					TEMPERATURE _____
RELINQUISHED BY	DATE	RECEIVED BY	DATE		SHIPMENT METHOD: <input type="checkbox"/> HAND
					<input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
SIGNATURE	TIME	SIGNATURE	TIME	COOLER NO.:	STORAGE LOCATION:
					TURNAROUND TIME:
PRINT NAME		PRINT NAME			<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK
COMPANY		COMPANY		See Lab Work Order No. _____	<input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD
				for Other Contract Requirements	<input type="checkbox"/> 72 HOURS    OTHER _____





March 27, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90315-2)* Project.

Samples were received on *March 15, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

AAL Job Number: C90315-2  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MBPP8-10	MBPP8-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/21/19	03/21/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/21/19	03/21/19	03/19/19	03/19/19
MTBE	100	nd		nd		nd	nd
Dichlorodifluoromethane	50	nd		nd		nd	nd
Chloromethane	50	nd		nd		nd	nd
Vinyl chloride	50	nd		nd		nd	nd
Bromomethane	50	nd		nd		nd	nd
Chloroethane	50	nd		nd		nd	nd
Trichlorofluoromethane	50	nd		nd		nd	nd
1,1-Dichloroethene	50	nd		nd		nd	nd
Methylene chloride	20	nd		nd		nd	nd
trans-1,2-Dichloroethene	50	nd		nd		nd	nd
1,1-Dichloroethane	50	nd		nd		nd	nd
2,2-Dichloropropane	50	nd		nd		nd	nd
cis-1,2-Dichloroethene	50	nd		nd		nd	nd
Chloroform	50	nd		nd		nd	nd
1,1,1-Trichloroethane	50	nd		nd		nd	nd
Carbontetrachloride	50	nd		nd		nd	nd
1,1-Dichloropropene	50	nd		nd		nd	nd
Benzene	20	nd	88%	nd	81%	nd	nd
1,2-Dichloroethane(EDC)	20	nd		nd		nd	nd
Trichloroethene	20	nd	84%	nd	80%	nd	nd
1,2-Dichloropropane	50	nd		nd		nd	nd
Dibromomethane	50	nd		nd		nd	nd
Bromodichloromethane	50	nd		nd		nd	nd
cis-1,3-Dichloropropene	50	nd		nd		nd	nd
Toluene	50	nd	94%	nd	91%	nd	nd
trans-1,3-Dichloropropene	50	nd		nd		nd	nd
1,1,2-Trichloroethane	50	nd		nd		nd	nd
Tetrachloroethene	50	nd		nd		nd	nd
1,3-Dichloropropane	50	nd		nd		nd	nd
Dibromochloromethane	20	nd		nd		nd	nd
1,2-Dibromoethane (EDB)*	5	nd		nd		nd	nd
Chlorobenzene	50	nd	102%	nd	95%	nd	nd
1,1,1,2-Tetrachloroethane	50	nd		nd		nd	nd
Ethylbenzene	50	nd		nd		nd	nd
Xylenes	50	nd		nd		nd	nd
Styrene	50	nd		nd		nd	nd
Bromoform	50	nd		nd		nd	nd
Isopropylbenzene	50	nd		nd		nd	nd
1,2,3-Trichloropropane	50	nd		nd		nd	nd
Bromobenzene	50	nd		nd		nd	nd
1,1,2,2-Tetrachloroethane	50	nd		nd		nd	nd
n-Propylbenzene	50	nd		nd		nd	nd
2-Chlorotoluene	50	nd		nd		nd	nd
4-Chlorotoluene	50	nd		nd		nd	nd
1,3,5-Trimethylbenzene	50	nd		nd		nd	nd
tert-Butylbenzene	50	nd		nd		nd	nd
1,2,4-Trimethylbenzene	50	nd		nd		nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MTH BLK	LCS	MTH BLK	LCS	MBPP8-10	MBPP8-15
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/21/19	03/21/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/21/19	03/21/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd		nd		nd	nd
1,3-Dichlorobenzene	50	nd		nd		nd	nd
Isopropyltoluene	50	nd		nd		nd	nd
1,4-Dichlorobenzene	50	nd		nd		nd	nd
1,2-Dichlorobenzene	50	nd		nd		nd	nd
n-Butylbenzene	50	nd		nd		nd	nd
1,2-Dibromo-3-Chloropropane	50	nd		nd		nd	nd
1,2,4-Trichlorobenzene	50	nd		nd		nd	nd
Hexachloro-1,3-butadiene	50	nd		nd		nd	nd
Naphthalene	50	nd		nd		nd	nd
1,2,3-Trichlorobenzene	50	nd		nd		nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	97%	88%	96%	88%	84%	78%
Toluene-d8	108%	89%	112%	87%	92%	90%
1,2-Dichloroethane-d4	97%	99%	96%	101%	101%	99%
4-Bromofluorobenzene	95%	97%	102%	103%	97%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP8-30	MBGW14-10	MBGW14-15	MBGW14-20
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP8-30	MBGW14-10	MBGW14-15	MBGW14-20
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	85%	91%	90%	93%
Toluene-d8	92%	101%	105%	98%
1,2-Dichloroethane-d4	99%	101%	101%	94%
4-Bromofluorobenzene	98%	102%	104%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW14-30	MBPP1-20	MBPP1-25	MBPP2-10	MBPP2-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW14-30	MBPP1-20	MBPP1-25	MBPP2-10	MBPP2-20
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	94%	93%	88%	86%
Toluene-d8	88%	102%	102%	93%	95%
1,2-Dichloroethane-d4	101%	95%	96%	97%	101%
4-Bromofluorobenzene	103%	90%	100%	104%	117%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP2-27.5	MBPP3-10	MBPP3-20	MBPP3-25	MBPP8-22.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBPP2-27.5	MBPP3-10	MBPP3-20	MBPP3-25	MBPP8-22.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	85%	89%	88%	87%	85%
Toluene-d8	93%	96%	92%	90%	89%
1,2-Dichloroethane-d4	102%	98%	104%	103%	99%
4-Bromofluorobenzene	104%	97%	100%	111%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW9-10	MBGW9-15	MBGW9-20	MBGW9-25	MBGW9-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
MTBE	100	nd	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW9-10	MBGW9-15	MBGW9-20	MBGW9-25	MBGW9-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	85%	89%	88%	89%
Toluene-d8	93%	94%	94%	93%	94%
1,2-Dichloroethane-d4	97%	99%	103%	101%	102%
4-Bromofluorobenzene	108%	99%	103%	98%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW10-10	MBGW10-15	MBGW10-20	MBGW10-25
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW10-10	MBGW10-15	MBGW10-20	MBGW10-25
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/19/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/19/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	86%	83%	90%
Toluene-d8	85%	96%	85%	97%
1,2-Dichloroethane-d4	98%	98%	102%	97%
4-Bromofluorobenzene	104%	94%	104%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW10-30	MBGW11-5	MBGW11-10	HMW21B-7.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/21/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW10-30	MBGW11-5	MBGW11-10	HMW21B-7.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/19/19	03/19/19	03/19/19	03/21/19
Date analyzed	Limits	03/19/19	03/19/19	03/19/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	85%	87%	80%
Toluene-d8	92%	98%	91%	84%
1,2-Dichloroethane-d4	103%	106%	101%	98%
4-Bromofluorobenzene	98%	97%	101%	102%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW21B-15	HMW21B-22.5	HMW21B-30	HMW21B-45
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	120
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW21B-15	HMW21B-22.5	HMW21B-30	HMW21B-45
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	82%	86%	82%	82%
Toluene-d8	84%	97%	87%	88%
1,2-Dichloroethane-d4	98%	95%	98%	100%
4-Bromofluorobenzene	97%	99%	98%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW21B-65	HMW11B-7.5	HMW11B-15	HMW11B-20.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW21B-65	HMW11B-7.5	HMW11B-15	HMW11B-20.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	88%	84%	85%
Toluene-d8	102%	101%	89%	92%
1,2-Dichloroethane-d4	99%	95%	100%	98%
4-Bromofluorobenzene	93%	98%	95%	107%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW1IB-27.5	HMW1IB-50	HMW1IB-65	MBGW13-5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	24	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	120	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	nd	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		HMW11B-27.5	HMW11B-50	HMW11B-65	MBGW13-5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	81%	83%	81%	83%
Toluene-d8	84%	89%	86%	80%
1,2-Dichloroethane-d4	95%	99%	97%	99%
4-Bromofluorobenzene	109%	99%	104%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW13-7.5	MBGW13-10	MBGW13-12.5	MBGW13-15
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	140	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	170	3,900	500	110
Xylenes	50	190	7,000	630	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	970	85	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	100	3,000	250	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	200	5,700	510	79
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	550	15,000	1,600	210

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW13-7.5	MBGW13-10	MBGW13-12.5	MBGW13-15
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	970	103	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	55	2,200	230	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	87%	84%	80%	82%
Toluene-d8	96%	92%	85%	82%
1,2-Dichloroethane-d4	99%	103%	97%	96%
4-Bromofluorobenzene	111%	120%	99%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW13-20	MBGW6-10	MBGW6-15	MBGW6-20
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
MTBE	100	nd	nd	nd	nd
Dichlorodifluoromethane	50	nd	nd	nd	nd
Chloromethane	50	nd	nd	nd	nd
Vinyl chloride	50	nd	nd	nd	nd
Bromomethane	50	nd	nd	nd	nd
Chloroethane	50	nd	nd	nd	nd
Trichlorofluoromethane	50	nd	nd	nd	nd
1,1-Dichloroethene	50	nd	nd	nd	nd
Methylene chloride	20	nd	nd	nd	nd
trans-1,2-Dichloroethene	50	nd	nd	nd	nd
1,1-Dichloroethane	50	nd	nd	nd	nd
2,2-Dichloropropane	50	nd	nd	nd	nd
cis-1,2-Dichloroethene	50	nd	nd	nd	nd
Chloroform	50	nd	nd	nd	nd
1,1,1-Trichloroethane	50	nd	nd	nd	nd
Carbontetrachloride	50	nd	nd	nd	nd
1,1-Dichloropropene	50	nd	nd	nd	nd
Benzene	20	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	20	nd	nd	nd	nd
Trichloroethene	20	nd	nd	nd	nd
1,2-Dichloropropane	50	nd	nd	nd	nd
Dibromomethane	50	nd	nd	nd	nd
Bromodichloromethane	50	nd	nd	nd	nd
cis-1,3-Dichloropropene	50	nd	nd	nd	nd
Toluene	50	nd	nd	nd	nd
trans-1,3-Dichloropropene	50	nd	nd	nd	nd
1,1,2-Trichloroethane	50	nd	nd	nd	nd
Tetrachloroethene	50	nd	nd	nd	nd
1,3-Dichloropropane	50	nd	nd	nd	nd
Dibromochloromethane	20	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	5	nd	nd	nd	nd
Chlorobenzene	50	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	50	nd	nd	nd	nd
Ethylbenzene	50	60	nd	nd	nd
Xylenes	50	nd	nd	nd	nd
Styrene	50	nd	nd	nd	nd
Bromoform	50	nd	nd	nd	nd
Isopropylbenzene	50	nd	nd	nd	nd
1,2,3-Trichloropropane	50	nd	nd	nd	nd
Bromobenzene	50	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	50	nd	nd	nd	nd
n-Propylbenzene	50	nd	nd	nd	nd
2-Chlorotoluene	50	nd	nd	nd	nd
4-Chlorotoluene	50	nd	nd	nd	nd
1,3,5-Trimethylbenzene	50	nd	nd	nd	nd
tert-Butylbenzene	50	nd	nd	nd	nd
1,2,4-Trimethylbenzene	50	120	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/kg		MBGW13-20	MBGW6-10	MBGW6-15	MBGW6-20
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19
sec-Butylbenzene	50	nd	nd	nd	nd
1,3-Dichlorobenzene	50	nd	nd	nd	nd
Isopropyltoluene	50	nd	nd	nd	nd
1,4-Dichlorobenzene	50	nd	nd	nd	nd
1,2-Dichlorobenzene	50	nd	nd	nd	nd
n-Butylbenzene	50	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	50	nd	nd	nd	nd
1,2,4-Trichlorobenzene	50	nd	nd	nd	nd
Hexachloro-1,3-butadiene	50	nd	nd	nd	nd
Naphthalene	50	nd	nd	nd	nd
1,2,3-Trichlorobenzene	50	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	84%	87%	86%	92%
Toluene-d8	88%	97%	91%	101%
1,2-Dichloroethane-d4	101%	96%	101%	100%
4-Bromofluorobenzene	111%	96%	100%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS	MSD	RPD	MS	
8260B, µg/kg		MBGW6-30	MBPP8-10	MBPP8-10	MBPP8-10	HMW11B-20.5
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/19/19	03/19/19	03/19/19	03/21/19
Date analyzed	Limits	03/21/19	03/19/19	03/19/19	03/19/19	03/21/19

MTBE	100	nd				
Dichlorodifluoromethane	50	nd				
Chloromethane	50	nd				
Vinyl chloride	50	nd				
Bromomethane	50	nd				
Chloroethane	50	nd				
Trichlorofluoromethane	50	nd				
1,1-Dichloroethene	50	nd				
Methylene chloride	20	nd				
trans-1,2-Dichloroethene	50	nd				
1,1-Dichloroethane	50	nd				
2,2-Dichloropropane	50	nd				
cis-1,2-Dichloroethene	50	nd				
Chloroform	50	nd				
1,1,1-Trichloroethane	50	nd				
Carbontetrachloride	50	nd				
1,1-Dichloropropene	50	nd				
Benzene	20	nd	82%	92%	12%	79%
1,2-Dichloroethane(EDC)	20	nd				
Trichloroethene	20	nd	81%	87%	7%	75%
1,2-Dichloropropane	50	nd				
Dibromomethane	50	nd				
Bromodichloromethane	50	nd				
cis-1,3-Dichloropropene	50	nd				
Toluene	50	nd	87%	105%	19%	83%
trans-1,3-Dichloropropene	50	nd				
1,1,2-Trichloroethane	50	nd				
Tetrachloroethene	50	nd				
1,3-Dichloropropane	50	nd				
Dibromochloromethane	20	nd				
1,2-Dibromoethane (EDB)*	5	nd				
Chlorobenzene	50	nd	92%	111%	18%	92%
1,1,1,2-Tetrachloroethane	50	nd				
Ethylbenzene	50	nd				
Xylenes	50	nd				
Styrene	50	nd				
Bromoform	50	nd				
Isopropylbenzene	50	nd				
1,2,3-Trichloropropane	50	nd				
Bromobenzene	50	nd				
1,1,2,2-Tetrachloroethane	50	nd				
n-Propylbenzene	50	nd				
2-Chlorotoluene	50	nd				
4-Chlorotoluene	50	nd				
1,3,5-Trimethylbenzene	50	nd				
tert-Butylbenzene	50	nd				
1,2,4-Trimethylbenzene	50	nd				

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS	MSD	RPD	MS	
<b>8260B, µg/kg</b>		<b>MBGW6-30</b>	<b>MBPP8-10</b>	<b>MBPP8-10</b>	<b>MBPP8-10</b>	<b>HMW11B-20.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/19/19	03/19/19	03/19/19	03/21/19
Date analyzed	Limits	03/21/19	03/19/19	03/19/19	03/19/19	03/21/19

sec-Butylbenzene	50	nd
1,3-Dichlorobenzene	50	nd
Isopropyltoluene	50	nd
1,4-Dichlorobenzene	50	nd
1,2-Dichlorobenzene	50	nd
n-Butylbenzene	50	nd
1,2-Dibromo-3-Chloropropane	50	nd
1,2,4-Trichlorobenzene	50	nd
Hexachloro-1,3-butadiene	50	nd
Naphthalene	50	nd
1,2,3-Trichlorobenzene	50	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	87%	91%	86%	88%
Toluene-d8	97%	98%	85%	86%
1,2-Dichloroethane-d4	100%	101%	97%	93%
4-Bromofluorobenzene	99%	95%	99%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MSD	RPD
<b>8260B, µg/kg</b>		<b>HMW11B-20.5</b>	<b>HMW11B-20.5</b>
Matrix	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19

MTBE	100		
Dichlorodifluoromethane	50		
Chloromethane	50		
Vinyl chloride	50		
Bromomethane	50		
Chloroethane	50		
Trichlorofluoromethane	50		
1,1-Dichloroethene	50		
Methylene chloride	20		
trans-1,2-Dichloroethene	50		
1,1-Dichloroethane	50		
2,2-Dichloropropane	50		
cis-1,2-Dichloroethene	50		
Chloroform	50		
1,1,1-Trichloroethane	50		
Carbontetrachloride	50		
1,1-Dichloropropene	50		
Benzene	20	91%	14%
1,2-Dichloroethane(EDC)	20		
Trichloroethene	20	89%	17%
1,2-Dichloropropane	50		
Dibromomethane	50		
Bromodichloromethane	50		
cis-1,3-Dichloropropene	50		
Toluene	50	102%	20%
trans-1,3-Dichloropropene	50		
1,1,2-Trichloroethane	50		
Tetrachloroethene	50		
1,3-Dichloropropane	50		
Dibromochloromethane	20		
1,2-Dibromoethane (EDB)*	5		
Chlorobenzene	50	111%	19%
1,1,1,2-Tetrachloroethane	50		
Ethylbenzene	50		
Xylenes	50		
Styrene	50		
Bromoform	50		
Isopropylbenzene	50		
1,2,3-Trichloropropane	50		
Bromobenzene	50		
1,1,2,2-Tetrachloroethane	50		
n-Propylbenzene	50		
2-Chlorotoluene	50		
4-Chlorotoluene	50		
1,3,5-Trimethylbenzene	50		
tert-Butylbenzene	50		
1,2,4-Trimethylbenzene	50		

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MSD	RPD
<b>8260B, µg/kg</b>		<b>HMW11B-20.5</b>	<b>HMW11B-20.5</b>
Matrix	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19

sec-Butylbenzene	50
1,3-Dichlorobenzene	50
Isopropyltoluene	50
1,4-Dichlorobenzene	50
1,2-Dichlorobenzene	50
n-Butylbenzene	50
1,2-Dibromo-3-Chloropropane	50
1,2,4-Trichlorobenzene	50
Hexachloro-1,3-butadiene	50
Naphthalene	50
1,2,3-Trichlorobenzene	50

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%
Toluene-d8	88%
1,2-Dichloroethane-d4	99%
4-Bromofluorobenzene	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 M-matrix interference  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	MBPP8-10	MBPP8-15	MBPP8-30	MBPP2-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	150	nd	nd

Surrogate recoveries:

Fluorobiphenyl	84%	93%	86%	86%	84%
o-Terphenyl	99%	102%	94%	93%	93%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW9-10	MBGW9-15	MBGW9-25	MBGW9-30	MBGW10-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	82%	87%	84%	83%	84%
o-Terphenyl	92%	92%	93%	91%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW10-15	MBGW10-25	MBGW10-30	MBGW11-5	MBGW11-10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	85%	83%	83%	86%	84%
o-Terphenyl	93%	94%	92%	90%	94%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		HMW21B-7.5	HMW21B-22.5	HMW11B-7.5	HMW11B-27.5
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	83%	84%	85%	80%
o-Terphenyl	93%	92%	93%	94%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/kg		MBGW13-5	MBGW13-10	MBGW13-15	MBGW6-10	MBGW6-30
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil /Creosote	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	85%	87%	84%	85%	84%
o-Terphenyl	92%	95%	92%	94%	93%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl
<b>NWTPH-Dx, mg/kg</b>		<b>MBGW6-30</b>
Matrix	Soil	Soil
Date extracted	Reporting	03/15/19
Date analyzed	Limits	03/15/19
Kerosene/Jet fuel	20	nd
Diesel/Fuel oil /Creosote	20	nd
Heavy oil	50	nd

Surrogate recoveries:

Fluorobiphenyl	80%
o-Terphenyl	89%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 M - matrix Interference  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MTH BLK</b>	<b>MTH BLK</b>	<b>MTH BLK</b>	<b>MBPP8-10</b>	<b>MBPP8-15</b>	<b>MBPP8-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/20/19	03/21/19	03/23/19	03/20/19	03/20/19	03/20/19
Date analyzed	Limits	03/20/19	03/21/19	03/23/19	03/20/19	03/20/19	03/20/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	80%	94%	118%	78%	71%	71%
Bromofluorobenzene	96%	91%	103%	115%	107%	119%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBGW14-10</b>	<b>MBGW14-20</b>	<b>MBGW14-30</b>	<b>MBPP1-20</b>	<b>MBPP1-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/20/19	03/20/19	03/20/19	03/20/19	03/20/19
Date analyzed	Limits	03/20/19	03/20/19	03/20/19	03/20/19	03/20/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	73%	76%	73%	78%	89%
Bromofluorobenzene	119%	117%	115%	110%	82%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBPP2-10</b>	<b>MBPP2-20</b>	<b>MBPP2-27.5</b>	<b>MBPP3-10</b>	<b>MBPP3-25</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/20/19	03/20/19	03/20/19	03/20/19	03/20/19
Date analyzed	Limits	03/20/19	03/20/19	03/20/19	03/20/19	03/20/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	82%	79%	82%	80%	85%
Bromofluorobenzene	86%	83%	83%	88%	88%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBGW9-10</b>	<b>MBGW9-15</b>	<b>MBGW9-25</b>	<b>MBGW9-30</b>	<b>MBGW10-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/21/19	03/21/19	03/21/19
Date analyzed	Limits	03/21/19	03/21/19	03/21/19	03/21/19	03/21/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	76%	93%	94%	70%	107%
Bromofluorobenzene	70%	78%	85%	71%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl				
<b>NWTPH-Gx</b>		<b>MBGW10-15</b>	<b>MBGW10-15</b>	<b>MBGW10-25</b>	<b>MBGW10-30</b>	<b>MBGW11-5</b>
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/23/19	03/23/19	03/23/19
Date analyzed	Limits	03/21/19	03/21/19	03/23/19	03/23/19	03/23/19

<b>NWTPH-Gx, mg/kg</b>						
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	88%	83%	92%	98%	91%
Bromofluorobenzene	80%	80%	73%	72%	72%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl			
<b>NWTPH-Gx</b>		<b>MBGW11-10</b>	<b>HMW21B-7.5</b>	<b>HMW21B-7.5</b>	<b>HMW21B-22.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/23/19	03/23/19	03/23/19	03/21/19
Date analyzed	Limits	03/23/19	03/23/19	03/23/19	03/21/19

<b>NWTPH-Gx, mg/kg</b>					
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	nd

Surrogate recoveries:					
Trifluorotoluene		101%	87%	86%	95%
Bromofluorobenzene		88%	89%	89%	86%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>HMW1B-7.5</b>	<b>HMW1B-27.5</b>	<b>MBGW13-5</b>	<b>MBGW13-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/21/19	03/21/19	03/23/19	03/23/19
Date analyzed	Limits	03/21/19	03/21/19	03/23/19	03/23/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd
Gasoline	5.0	nd	nd	nd	730

Surrogate recoveries:

Trifluorotoluene	100%	109%	103%	C
Bromofluorobenzene	92%	96%	106%	C

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MBGW13-15</b>	<b>MBGW13-20</b>	<b>MBGW6-10</b>	<b>MBGW6-30</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	03/23/19	03/23/19	03/23/19	03/23/19
Date analyzed	Limits	03/23/19	03/23/19	03/23/19	03/23/19

**NWTPH-Gx, mg/kg**

Mineral spirits/Stoddard	5.0	nd	nd	nd	nd
Gasoline	5.0	16	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	80%	87%	104%	88%
Bromofluorobenzene	103%	96%	108%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 M - matrix interference  
 C - coelution with sample peaks  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBPP8-10</b>	<b>MBPP8-15</b>	<b>MBPP8-30</b>	<b>MBPP2-10</b>	<b>MBGW9-10</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/26/19	03/26/19	03/26/19	03/26/19	03/26/19
Moisture, %	18%	18%	16%	18%	17%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW9-15</b>	<b>MBGW9-25</b>	<b>MBGW9-30</b>	<b>MBGW10-10</b>	<b>MBGW10-15</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/26/19	03/26/19	03/26/19	03/26/19	03/26/19
Moisture, %	17%	18%	18%	18%	16%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW10-25</b>	<b>MBGW10-30</b>	<b>MBGW11-5</b>	<b>MBGW11-10</b>	<b>HMW21B-7.5</b>
Matrix	Soil	Soil	Soil	Soil	Soil
Date analyzed	03/26/19	03/26/19	03/26/19	03/26/19	03/26/19
Moisture, %	18%	17%	17%	19%	18%

AAL Job Number: C90315-2  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>HMW21B-22.5</b>	<b>HMW11B-7.5</b>	<b>HMW11B-27.5</b>	<b>MBGW13-5</b>
Matrix	Soil	Soil	Soil	Soil
Date analyzed	03/26/19	03/26/19	03/26/19	03/26/19
Moisture, %	17%	18%	17%	16%

AAL Job Number: C90315-2  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/15/19

<b>Moisture, SM2540B</b>	<b>MBGW13-10</b>	<b>MBGW13-15</b>	<b>MBGW6-10</b>	<b>MBGW6-30</b>
Matrix	Soil	Soil	Soil	Soil
Date analyzed	03/26/19	03/26/19	03/26/19	03/26/19
Moisture, %	17%	17%	19%	16%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/L		MTH BLK	LCS	MBGW5-GW	MBGW6-GW	MBGW9-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	5.0	nd		nd	nd	nd
Chloromethane	1.0	nd		nd	nd	nd
Vinyl chloride(*)	0.2	nd		nd	nd	nd
Bromomethane	1.0	nd		nd	nd	nd
Chloroethane	1.0	nd		nd	nd	nd
Trichlorofluoromethane	1.0	nd		nd	nd	nd
1,1-Dichloroethene	1.0	nd		nd	nd	nd
Methylene chloride	1.0	nd		nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd		nd	nd	nd
1,1-Dichloroethane	1.0	nd		nd	nd	nd
2,2-Dichloropropane	1.0	nd		nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd		2.1	1.0	nd
Chloroform	1.0	nd		nd	nd	nd
1,1,1-Trichloroethane	1.0	nd		nd	nd	nd
Carbontetrachloride	1.0	nd		nd	nd	nd
1,1-Dichloropropene	1.0	nd		nd	nd	nd
Benzene	1.0	nd	100%	nd	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd		nd	nd	nd
Trichloroethene	1.0	nd	86%	nd	1.1	nd
1,2-Dichloropropane	1.0	nd		nd	nd	nd
Dibromomethane	1.0	nd		nd	nd	nd
Bromodichloromethane	1.0	nd		nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd		nd	nd	nd
Toluene	1.0	nd	98%	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd		nd	nd	nd
1,1,2-Trichloroethane	1.0	nd		nd	nd	nd
Tetrachloroethene	1.0	nd		nd	4.3	nd
1,3-Dichloropropane	1.0	nd		nd	nd	nd
Dibromochloromethane	1.0	nd		nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd		nd	nd	nd
Chlorobenzene	1.0	nd	100%	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd		nd	nd	nd
Ethylbenzene	1.0	nd		nd	nd	nd
Xylenes	1.0	nd		nd	nd	nd
Styrene	1.0	nd		nd	nd	nd
Bromoform	1.0	nd		nd	nd	nd
Isopropylbenzene	1.0	nd		nd	nd	nd
1,2,3-Trichloropropane	1.0	nd		nd	nd	nd
Bromobenzene	1.0	nd		nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd		nd	nd	nd
n-Propylbenzene	1.0	nd		nd	nd	nd
2-Chlorotoluene	1.0	nd		nd	nd	nd
4-Chlorotoluene	1.0	nd		nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd		nd	nd	nd
tert-Butylbenzene	1.0	nd		nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd		nd	nd	nd
sec-Butylbenzene	1.0	nd		nd	nd	nd
1,3-Dichlorobenzene	1.0	nd		nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/L		MTH BLK	LCS	MBGW5-GW	MBGW6-GW	MBGW9-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	5.0	nd		nd	nd	nd
Isopropyltoluene	1.0	nd		nd	nd	nd
1,4-Dichlorobenzene	1.0	nd		nd	nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd	nd
n-Butylbenzene	1.0	nd		nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd	nd
Naphthalene	1.0	nd		nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane		105%	94%	91%	95%	99%
Toluene-d8		123%	92%	97%	113%	112%
1,2-Dichloroethane-d4		96%	101%	99%	98%	94%
4-Bromofluorobenzene		99%	104%	101%	99%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/L		MBGW10-GW	MBGW11-GW	MBGW13-GW	MBGW15-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	5.0	nd	nd	nd	nd
Chloromethane	1.0	nd	nd	nd	nd
Vinyl chloride(*)	0.2	nd	nd	nd	nd
Bromomethane	1.0	nd	nd	nd	nd
Chloroethane	1.0	nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd	nd	nd	nd
Chloroform	1.0	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd	nd	nd	nd
Carbontetrachloride	1.0	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd	nd
Benzene	1.0	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd	nd	nd	nd
Trichloroethene	1.0	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd	nd
Toluene	1.0	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd
Tetrachloroethene	1.0	nd	nd	nd	35
1,3-Dichloropropane	1.0	nd	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd
Xylenes	1.0	nd	nd	nd	nd
Styrene	1.0	nd	nd	nd	nd
Bromoform	1.0	nd	nd	nd	nd
Isopropylbenzene	1.0	nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd	nd

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

8260B, µg/L		MBGW10-GW	MBGW11-GW	MBGW13-GW	MBGW15-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19	03/15/19
MTBE	5.0	nd	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd	nd	nd	nd
Naphthalene	1.0	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	90%	94%	87%	88%
Toluene-d8	95%	99%	87%	87%
1,2-Dichloroethane-d4	100%	99%	101%	100%
4-Bromofluorobenzene	103%	114%	100%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS	MSD	RPD
8260B, µg/L		MBGW5-GW	MBGW5-GW	MBGW5-GW
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19

MTBE	5.0			
Chloromethane	1.0			
Vinyl chloride(*)	0.2			
Bromomethane	1.0			
Chloroethane	1.0			
Trichlorofluoromethane	1.0			
1,1-Dichloroethene	1.0			
Methylene chloride	1.0			
trans-1,2-Dichloroethene	1.0			
1,1-Dichloroethane	1.0			
2,2-Dichloropropane	1.0			
cis-1,2-Dichloroethene	1.0			
Chloroform	1.0			
1,1,1-Trichloroethane	1.0			
Carbontetrachloride	1.0			
1,1-Dichloropropene	1.0			
Benzene	1.0	93%	108%	15%
1,2-Dichloroethane(EDC)	1.0			
Trichloroethene	1.0	95%	103%	8%
1,2-Dichloropropane	1.0			
Dibromomethane	1.0			
Bromodichloromethane	1.0			
cis-1,3-Dichloropropene	1.0			
Toluene	1.0	101%	108%	6%
trans-1,3-Dichloropropene	1.0			
1,1,2-Trichloroethane	1.0			
Tetrachloroethene	1.0			
1,3-Dichloropropane	1.0			
Dibromochloromethane	1.0			
1,2-Dibromoethane (EDB)*	0.01			
Chlorobenzene	1.0	104%	119%	13%
1,1,1,2-Tetrachloroethane	1.0			
Ethylbenzene	1.0			
Xylenes	1.0			
Styrene	1.0			
Bromoform	1.0			
Isopropylbenzene	1.0			
1,2,3-Trichloropropane	1.0			
Bromobenzene	1.0			
1,1,2,2-Tetrachloroethane	1.0			
n-Propylbenzene	1.0			
2-Chlorotoluene	1.0			
4-Chlorotoluene	1.0			
1,3,5-Trimethylbenzene	1.0			
tert-Butylbenzene	1.0			
1,2,4-Trimethylbenzene	1.0			
sec-Butylbenzene	1.0			
1,3-Dichlorobenzene	1.0			

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		MS	MSD	RPD
8260B, µg/L		MBGW5-GW	MBGW5-GW	MBGW5-GW
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/15/19	03/15/19	03/15/19

MTBE	5.0
Isopropyltoluene	1.0
1,4-Dichlorobenzene	1.0
1,2-Dichlorobenzene	1.0
n-Butylbenzene	1.0
1,2-Dibromo-3-Chloropropane	1.0
1,2,4-Trichlorobenzene	1.0
Hexachloro-1,3-butadiene	1.0
Naphthalene	1.0
1,2,3-Trichlorobenzene	1.0

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	94%	94%
Toluene-d8	88%	94%
1,2-Dichloroethane-d4	100%	101%
4-Bromofluorobenzene	98%	106%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Dx, mg/L		MTH BLK	MBGW5-GW	MBGW6-GW	MBGW9-GW	MBGW10-GW
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	84%	85%	86%	84%	88%
o-Terphenyl	102%	95%	96%	94%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results		Dupl			
NWTPH-Dx, mg/L		MBGW11-GW	MBGW13-GW	MBGW15-GW	MBGW15-GW
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	03/15/19	03/15/19	03/15/19	03/15/19
Date analyzed	Limits	03/15/19	03/15/19	03/15/19	03/15/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	83%	106%	101%	84%
o-Terphenyl	94%	114%	109%	120%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results

NWTPH-Gx		MTH BLK	MBGW5-GW	MBGW6-GW	MBGW9-GW	MBGW10-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/16/19	03/16/19	03/16/19	03/16/19	03/16/19

NWTPH-Gx, mg/L

Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	99%	124%	122%	120%	101%
Bromofluorobenzene	88%	108%	107%	111%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90315-2  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/15/19

Analytical Results					Dupl
<b>NWTPH-Gx</b>		<b>MBGW11-GW</b>	<b>MBGW13-GW</b>	<b>MBGW15-GW</b>	<b>MBGW15-GW</b>
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/16/19	03/16/19	03/16/19	03/16/19

<b>NWTPH-Gx, mg/L</b>					
Mineral spirits/Stoddard	0.10	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd

Surrogate recoveries:					
Trifluorotoluene		114%	112%	99%	104%
Bromofluorobenzene		110%	113%	95%	100%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

# Sample Custody Record

Samples Shipped to: Advanced Analytical Labs



Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1740901</u> LAB NUMBER _____ PROJECT NAME <u>Meteor Meteor Block</u> HART CROWSER CONTACT <u>My Jensen</u> SAMPLED BY: _____						REQUESTED ANALYSIS TPHG TPH-Dx VOCs PAHs										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX												
	MBPP8-10.0		3/6/19	0706	soil	X	X	X									
	MBPP8-15.0		3/6/19	0715		X	X	X									
	MBPP8-30.0		3/6/19	0948		X	X	X									
	MBGW14-10.0		3/6/19			X		X									
	MBGW14-15.0		3/6/19					X									
	MBGW14-20.0		3/6/19			X		X									
	MBGW14-30.0		3/6/19			X		X									
	MBPP1-20.0		3/5/19			X		X									
	MBPP1-25.0		3/5/19			X		X									
	MBPP2-10.0		3/5/19			X	X	X									
	MBPP2-20.0		3/5/19			X		X									
	MBPP2-27.5		3/5/19			X		X									
RELINQUISHED BY <i>[Signature]</i> SIGNATURE PRINT NAME COMPANY		DATE 3/15/19 TIME 12:22	RECEIVED BY <i>[Signature]</i> SIGNATURE PRINT NAME COMPANY		DATE 03/15/19 TIME 12:30	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements										TOTAL NUMBER OF CONTAINERS  SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT  TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____	

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

Samples Shipped to: Advanced Analytical Lab

090315-2



208 3

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER _____ PROJECT NAME <u>Mercer Mega Block</u> HART CROWSER CONTACT <u>Boj Jensen</u> SAMPLED BY: _____						REQUESTED ANALYSIS TPHG TPH-DX VOCs PAHs										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																
	MBPP3	-10.0	3/6/19		Soil	X		X													
	MBPP3	-20.0	3/6/19					X													
	MBPP3	-25.0	3/6/19			X		X													
	MBPP3	-22.5	3/6/19					X													
	MBGW7	-10.0	3/13/19	1355		X	X	X													
	MBGW7	-15.0	3/13/19	1415		X	X	X													
	MBGW7	-20.0	3/13/19	1435				X													
	MBGW7	-25.0	3/13/19	1500		X	X	X													
	MBGW7	-30.0	3/13/19	1525		X	X	X													
	MBGW10	-10.0	3/13/19	0900		X	X	X													
	MBGW10	-15.0	3/13/19	0920		X	X	X													
	MBGW10	-20.0	3/13/19	0945				X													
RELINQUISHED BY		DATE	RECEIVED BY			DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements										TOTAL NUMBER OF CONTAINERS				
SIGNATURE		TIME	SIGNATURE			TIME											SAMPLE RECEIPT INFORMATION				
PRINT NAME		TIME	PRINT NAME		TIME	CUSTODY SEALS:															
COMPANY		TIME	COMPANY		TIME	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____															

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

C90315-2



3092

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: AAL

JOB <u>1940901</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Ray Jensen</u> SAMPLED BY: _____						REQUESTED ANALYSIS <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 5px;">TPHG</div> <div style="margin-bottom: 5px;">TPH-DX</div> <div style="margin-bottom: 5px;">VOCs</div> <div style="margin-bottom: 5px;">PAHS</div> </div>										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
	MBGW10-25.0		3/13/19	1010	soil	X	X	X												
	MBGW10-30.0		3/13/19	1040	soil	X	X	X												
	MBGW9-6W		3/13/19	1615	water	X	X	X												
	MBGW10-6W		3/13/19	1115	water	X	X	X												
	MBGW5-6W		3/11/19	1300	water	X	X	X												
	MBGW11-6W		3/12/19	1443	water	X	X	X												
	MBGW11-5.0		3/12/19	0913	soil	X	X	X												
	MBGW11-10.0		3/12/19	0933	soil	X	X	X												
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements										TOTAL NUMBER OF CONTAINERS				
SIGNATURE		TIME	SIGNATURE		TIME											SAMPLE RECEIPT INFORMATION				
PRINT NAME		TIME	PRINT NAME		TIME											CUSTODY SEALS:				
COMPANY		TIME	COMPANY		TIME											<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT				
RELINQUISHED BY		DATE	RECEIVED BY		DATE											TURNAROUND TIME:				
SIGNATURE		TIME	SIGNATURE		TIME											<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____				
PRINT NAME		TIME	PRINT NAME		TIME															
COMPANY		TIME	COMPANY		TIME															

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

C90315-2



1 of 3

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: AA L

JOB <u>940901</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>roy Jensen</u> SAMPLED BY: _____	REQUESTED ANALYSIS <table border="1" style="width:100%; height: 100px; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPHG</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-Dx</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	TPHG	TPH-Dx	VOCs	PAHs																			NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSING INSTRUCTIONS
TPHG	TPH-Dx	VOCs	PAHs																						

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	TPHG	TPH-Dx	VOCs	PAHs												
	HMW21B-7.5		3/12/19	1140	soil	X	X	X													
	HMW21B-15		3/12/19	1258				X													
	HMW21B-22.5		3/12/19	1242		X	XX														
	HMW21B-30		3/12/19	1307				X													
	HMW21B-45		3/12/19	1402				X													
	HMW21B-65		3/12/19	1525				X													
	HMW21B-7.5		3/12/19	1110		X	XX	X													
	HMW21B-15		3/12/19	1157				X													
	HMW21B-20.5		3/12/19	1349				X													
	HMW21B-27.5		3/12/19	1444		XX	X	X													
	HMW21B-50.0		3/12/19	1705				X													
	HMW21B-65.0		3/13/19	1315				X													

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>[Signature]</u>	3/15/19	<u>[Signature]</u>	03/15/19		
SIGNATURE	TIME	SIGNATURE	TIME		SAMPLE RECEIPT INFORMATION
<u>[Signature]</u>	1222	<u>[Signature]</u>	12:30		CUSTODY SEALS:
PRINT NAME		PRINT NAME			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
COMPANY		COMPANY			GOOD CONDITION
					<input type="checkbox"/> YES <input type="checkbox"/> NO
RELINQUISHED BY	DATE	RECEIVED BY	DATE		TEMPERATURE _____
					SHIPMENT METHOD: <input type="checkbox"/> HAND
					<input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
SIGNATURE	TIME	SIGNATURE	TIME	COOLER NO.:	STORAGE LOCATION:
PRINT NAME		PRINT NAME		See Lab Work Order No. _____	TURNAROUND TIME:
COMPANY		COMPANY		for Other Contract Requirements	<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK
					<input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD
					<input type="checkbox"/> 72 HOURS    OTHER _____

# Sample Custody Record

C90315-2



2093

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: AAI

JOB <u>1940901</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
PROJECT NAME <u>MMB</u>						TPHG	TPH-DX	VOCs	PAHs												
HART CROWSER CONTACT <u>Bay Jensen</u>																					
SAMPLED BY: _____																					
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																
	MBGW6-6W		3/14/19	1620	water	X	X	X													
	MBGW13-6W		3/14/19	1140		X	X	X													
	MBGW15-6W		3/13/19	1345		X	X	X													
	MBGW13-5.0		3/14/19	0859	soil	X	X	X													
	MBGW13-7.5		3/14/19	0910				X													
	MBGW13-10.0		3/14/19	0917		X	X	X													
	MBGW13-12.5		3/14/19	0920				X													
	MBGW13-15		3/14/19	0930		X	X	X													
	MBGW13-20.0		3/14/19	1000		X		X													
	MBGW6-10.0		3/14/19	1320		X	X	X													
	MBGW6-15		3/14/19	1340				X													
	MBGW6-20		3/14/19	1405				X													
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:						TOTAL NUMBER OF CONTAINERS									
SIGNATURE		TIME	SIGNATURE		TIME							SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT									
PRINT NAME		TIME	PRINT NAME		TIME																
COMPANY		TIME	COMPANY		TIME																
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.:		STORAGE LOCATION:		TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____											
SIGNATURE		TIME	SIGNATURE		TIME	See Lab Work Order No. _____		for Other Contract Requirements													
PRINT NAME		TIME	PRINT NAME		TIME																
COMPANY		TIME	COMPANY		TIME																

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

Samples Shipped to: AAL

C90315-2



(6)

3073

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1740901</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Roy Jensen</u> SAMPLED BY: _____						REQUESTED ANALYSIS TPHG TPHDX VOCs PAHs										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS			
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
	<u>MP6W6-30</u>		<u>3/14/19</u>	<u>1530</u>	<u>Soil</u>	<u>X</u>	<u>X</u>	<u>X</u>												
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements										TOTAL NUMBER OF CONTAINERS				
SIGNATURE		TIME	SIGNATURE		TIME											SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT				
PRINT NAME			PRINT NAME													TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____				
COMPANY			COMPANY																	
RELINQUISHED BY		DATE	RECEIVED BY		DATE															
SIGNATURE		TIME	SIGNATURE		TIME															
PRINT NAME			PRINT NAME																	
COMPANY			COMPANY																	

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

March 29, 2019

*Roy Jensen  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121*

Dear Mr. Jensen:

Please find enclosed the analytical data report for the *Mercer Megablock 19409-01 (C90325-3)* Project.

Samples were received on *March 25, 2019*. The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Val G. Ivanov, Ph.D.  
Laboratory Manager

AAL Job Number: C90325-3  
Client: Hart Crowser, Inc.  
Project Manager: Roy Jensen  
Client Project Name: MMB  
Client Project Number: 19409-01  
Date received: 03/25/19

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L	MTH BLK	LCS	DMW-1S-GW-21	DMW-1S-GW-22	
Matrix	Water	Water	Water	Water	
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19	
MTBE	5.0	nd	nd	nd	
Chloromethane	1.0	nd	nd	nd	
Vinyl chloride(*)	0.2	nd	nd	nd	
Bromomethane	1.0	nd	nd	nd	
Chloroethane	1.0	nd	nd	nd	
Trichlorofluoromethane	1.0	nd	nd	nd	
1,1-Dichloroethene	1.0	nd	nd	nd	
Methylene chloride	1.0	nd	nd	nd	
trans-1,2-Dichloroethene	1.0	nd	nd	nd	
1,1-Dichloroethane	1.0	nd	nd	nd	
2,2-Dichloropropane	1.0	nd	nd	nd	
cis-1,2-Dichloroethene	1.0	nd	nd	nd	
Chloroform	1.0	nd	nd	nd	
1,1,1-Trichloroethane	1.0	nd	nd	nd	
Carbontetrachloride	1.0	nd	nd	nd	
1,1-Dichloropropene	1.0	nd	nd	nd	
Benzene	1.0	nd	85%	1.5	1.8
1,2-Dichloroethane(EDC)	1.0	nd	nd	nd	nd
Trichloroethene	1.0	nd	80%	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd	nd
Toluene	1.0	nd	92%	nd	nd
trans-1,3-Dichloropropene	1.0	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd
Tetrachloroethene	1.0	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd	nd	nd	nd
Chlorobenzene	1.0	nd	99%	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd
Xylenes	1.0	nd	nd	nd	nd
Styrene	1.0	nd	nd	nd	nd
Bromoform	1.0	nd	nd	nd	nd
Isopropylbenzene	1.0	nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd	nd

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L		MTH BLK	LCS	DMW-1S-GW-21	DMW-1S-GW-22
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd		nd	nd
Isopropyltoluene	1.0	nd		1.5	2.5
1,4-Dichlorobenzene	1.0	nd		nd	nd
1,2-Dichlorobenzene	1.0	nd		nd	nd
n-Butylbenzene	1.0	nd		nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd		nd	nd
1,2,4-Trichlorobenzene	1.0	nd		nd	nd
Hexachloro-1,3-butadiene	1.0	nd		nd	nd
Naphthalene	1.0	nd		nd	nd
1,2,3-Trichlorobenzene	1.0	nd		nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane		89%	90%	88%	87%
Toluene-d8		94%	84%	99%	94%
1,2-Dichloroethane-d4		100%	100%	99%	99%
4-Bromofluorobenzene		106%	96%	109%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L		HMW-3D	HMW-2S	HMW-2D	HMW-31A	HMW-41A
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd	nd	nd	nd	nd
Chloromethane	1.0	nd	nd	nd	nd	nd
Vinyl chloride(*)	0.2	nd	nd	nd	nd	3.6
Bromomethane	1.0	nd	nd	nd	nd	nd
Chloroethane	1.0	nd	nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd	nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	nd	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd
Chloroform	1.0	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd	nd	nd	nd	nd
Carbontetrachloride	1.0	nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd	nd	nd
Benzene	1.0	nd	nd	nd	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd	nd	nd	nd	nd
Trichloroethene	1.0	nd	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	nd	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd
Toluene	1.0	1.1	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd	nd
Tetrachloroethene	1.0	nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd	nd	nd
Xylenes	1.0	nd	nd	nd	nd	nd
Styrene	1.0	nd	nd	nd	nd	nd
Bromoform	1.0	nd	nd	nd	nd	nd
Isopropylbenzene	1.0	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd	nd	nd

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L		HMW-3D	HMW-2S	HMW-2D	HMW-31A	HMW-41A
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd	nd	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd	nd	nd	nd	nd
Naphthalene	1.0	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	91%	91%	87%	88%
Toluene-d8	93%	95%	92%	94%	95%
1,2-Dichloroethane-d4	97%	100%	98%	97%	102%
4-Bromofluorobenzene	103%	94%	108%	99%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L	HMW-1S-GW	HMW-1D-GW	HMW-1IB-GW	HMW-2IB-GW
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd	nd	nd
Chloromethane	1.0	nd	nd	nd
Vinyl chloride(*)	0.2	nd	4.0	nd
Bromomethane	1.0	nd	nd	nd
Chloroethane	1.0	nd	nd	nd
Trichlorofluoromethane	1.0	nd	nd	nd
1,1-Dichloroethene	1.0	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd	1.2	nd
1,1-Dichloroethane	1.0	nd	nd	nd
2,2-Dichloropropane	1.0	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd	410	22
Chloroform	1.0	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd	nd	nd
Carbontetrachloride	1.0	nd	nd	nd
1,1-Dichloropropene	1.0	nd	nd	nd
Benzene	1.0	nd	nd	nd
1,2-Dichloroethane(EDC)	1.0	nd	nd	nd
Trichloroethene	1.0	nd	27	6.7
1,2-Dichloropropane	1.0	nd	nd	nd
Dibromomethane	1.0	nd	nd	nd
Bromodichloromethane	1.0	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd	nd
Toluene	1.0	nd	nd	3.4
trans-1,3-Dichloropropene	1.0	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd
Tetrachloroethene	1.0	nd	3.4	20
1,3-Dichloropropane	1.0	nd	nd	nd
Dibromochloromethane	1.0	nd	nd	nd
1,2-Dibromoethane (EDB)*	0.01	nd	nd	nd
Chlorobenzene	1.0	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd
Ethylbenzene	1.0	nd	nd	nd
Xylenes	1.0	nd	nd	nd
Styrene	1.0	nd	nd	nd
Bromoform	1.0	nd	nd	nd
Isopropylbenzene	1.0	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd	nd
Bromobenzene	1.0	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd
n-Propylbenzene	1.0	nd	nd	nd
2-Chlorotoluene	1.0	nd	nd	nd
4-Chlorotoluene	1.0	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd	nd
tert-Butylbenzene	1.0	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd	nd
sec-Butylbenzene	1.0	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd	nd

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

8260B, µg/L		HMW-1S-GW	HMW-1D-GW	HMW-1IB-GW	HMW-2IB-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd	nd	nd	nd
Isopropyltoluene	1.0	nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd	nd	nd
n-Butylbenzene	1.0	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd	nd	nd	nd
Naphthalene	1.0	nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd	nd	nd

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	86%	93%	92%
Toluene-d8	92%	93%	97%	95%
1,2-Dichloroethane-d4	96%	97%	97%	101%
4-Bromofluorobenzene	105%	98%	97%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results		MS		MSD
8260B, µg/L	HMW-2IA-GW	DMW-1S-GW-21	DMW-1S-GW-21	
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd		
Chloromethane	1.0	nd		
Vinyl chloride(*)	0.2	1.2		
Bromomethane	1.0	nd		
Chloroethane	1.0	nd		
Trichlorofluoromethane	1.0	nd		
1,1-Dichloroethene	1.0	nd		
Methylene chloride	1.0	nd		
trans-1,2-Dichloroethene	1.0	nd		
1,1-Dichloroethane	1.0	nd		
2,2-Dichloropropane	1.0	nd		
cis-1,2-Dichloroethene	1.0	120		
Chloroform	1.0	nd		
1,1,1-Trichloroethane	1.0	nd		
Carbontetrachloride	1.0	nd		
1,1-Dichloropropene	1.0	nd		
Benzene	1.0	nd	87%	95%
1,2-Dichloroethane(EDC)	1.0	nd		
Trichloroethene	1.0	74	85%	86%
1,2-Dichloropropane	1.0	nd		
Dibromomethane	1.0	nd		
Bromodichloromethane	1.0	nd		
cis-1,3-Dichloropropene	1.0	nd		
Toluene	1.0	nd	90%	101%
trans-1,3-Dichloropropene	1.0	nd		
1,1,2-Trichloroethane	1.0	nd		
Tetrachloroethene	1.0	240		
1,3-Dichloropropane	1.0	nd		
Dibromochloromethane	1.0	nd		
1,2-Dibromoethane (EDB)*	0.01	nd		
Chlorobenzene	1.0	nd	98%	110%
1,1,1,2-Tetrachloroethane	1.0	nd		
Ethylbenzene	1.0	nd		
Xylenes	1.0	nd		
Styrene	1.0	nd		
Bromoform	1.0	nd		
Isopropylbenzene	1.0	nd		
1,2,3-Trichloropropane	1.0	nd		
Bromobenzene	1.0	nd		
1,1,2,2-Tetrachloroethane	1.0	nd		
n-Propylbenzene	1.0	nd		
2-Chlorotoluene	1.0	nd		
4-Chlorotoluene	1.0	nd		
1,3,5-Trimethylbenzene	1.0	nd		
tert-Butylbenzene	1.0	nd		
1,2,4-Trimethylbenzene	1.0	nd		
sec-Butylbenzene	1.0	nd		
1,3-Dichlorobenzene	1.0	nd		

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results		MS		MSD
8260B, µg/L	HMW-2IA-GW	DMW-1S-GW-21	DMW-1S-GW-21	
Matrix	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/26/19	03/26/19	03/26/19
MTBE	5.0	nd		
Isopropyltoluene	1.0	nd		
1,4-Dichlorobenzene	1.0	nd		
1,2-Dichlorobenzene	1.0	nd		
n-Butylbenzene	1.0	nd		
1,2-Dibromo-3-Chloropropane	1.0	nd		
1,2,4-Trichlorobenzene	1.0	nd		
Hexachloro-1,3-butadiene	1.0	nd		
Naphthalene	1.0	nd		
1,2,3-Trichlorobenzene	1.0	nd		

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane	89%	93%	88%
Toluene-d8	101%	96%	88%
1,2-Dichloroethane-d4	99%	103%	103%
4-Bromofluorobenzene	102%	101%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results		RPD
8260B, µg/L	DMW-1S-GW-21	
Matrix	Water	Water
Date analyzed	Reporting Limits	03/26/19

MTBE	5.0	
Chloromethane	1.0	
Vinyl chloride(*)	0.2	
Bromomethane	1.0	
Chloroethane	1.0	
Trichlorofluoromethane	1.0	
1,1-Dichloroethene	1.0	
Methylene chloride	1.0	
trans-1,2-Dichloroethene	1.0	
1,1-Dichloroethane	1.0	
2,2-Dichloropropane	1.0	
cis-1,2-Dichloroethene	1.0	
Chloroform	1.0	
1,1,1-Trichloroethane	1.0	
Carbontetrachloride	1.0	
1,1-Dichloropropene	1.0	
Benzene	1.0	9%
1,2-Dichloroethane(EDC)	1.0	
Trichloroethene	1.0	1%
1,2-Dichloropropane	1.0	
Dibromomethane	1.0	
Bromodichloromethane	1.0	
cis-1,3-Dichloropropene	1.0	
Toluene	1.0	12%
trans-1,3-Dichloropropene	1.0	
1,1,2-Trichloroethane	1.0	
Tetrachloroethene	1.0	
1,3-Dichloropropane	1.0	
Dibromochloromethane	1.0	
1,2-Dibromoethane (EDB)*	0.01	
Chlorobenzene	1.0	12%
1,1,1,2-Tetrachloroethane	1.0	
Ethylbenzene	1.0	
Xylenes	1.0	
Styrene	1.0	
Bromoform	1.0	
Isopropylbenzene	1.0	
1,2,3-Trichloropropane	1.0	
Bromobenzene	1.0	
1,1,2,2-Tetrachloroethane	1.0	
n-Propylbenzene	1.0	
2-Chlorotoluene	1.0	
4-Chlorotoluene	1.0	
1,3,5-Trimethylbenzene	1.0	
tert-Butylbenzene	1.0	
1,2,4-Trimethylbenzene	1.0	
sec-Butylbenzene	1.0	
1,3-Dichlorobenzene	1.0	

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results		RPD
<b>8260B, µg/L</b>		<b>DMW-1S-GW-21</b>
Matrix	Water	Water
Date analyzed	Reporting Limits	03/26/19

MTBE	5.0
Isopropyltoluene	1.0
1,4-Dichlorobenzene	1.0
1,2-Dichlorobenzene	1.0
n-Butylbenzene	1.0
1,2-Dibromo-3-Chloropropane	1.0
1,2,4-Trichlorobenzene	1.0
Hexachloro-1,3-butadiene	1.0
Naphthalene	1.0
1,2,3-Trichlorobenzene	1.0

\*-instrument detection limits

Surrogate recoveries

Dibromofluoromethane  
 Toluene-d8  
 1,2-Dichloroethane-d4  
 4-Bromofluorobenzene

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

NWTPH-Dx, mg/L		MTH BLK	DMW-1S-GW-21	DMW-1S-GW-22	HMW-3D	HMW-2S
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19
Date analyzed	Limits	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	117%	123%	107%	94%	98%
o-Terphenyl	130%	124%	112%	101%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

NWTPH-Dx, mg/L		HMW-2D	HMW-31A	HMW-41A	HMW-1S-GW	HMW-1D-GW
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19
Date analyzed	Limits	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	100%	106%	110%	104%	97%
o-Terphenyl	105%	113%	116%	110%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results					Dupl
NWTPH-Dx, mg/L		HMW-1IB-GW	HMW-2IB-GW	HMW-2IA-GW	HMW-2IA-GW
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	03/25/19	03/25/19	03/25/19	03/25/19
Date analyzed	Limits	03/25/19	03/25/19	03/25/19	03/25/19
Kerosene/Jet fuel	0.20	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd

Surrogate recoveries:

Fluorobiphenyl	104%	122%	101%	101%
o-Terphenyl	111%	127%	108%	108%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

<b>NWTPH-Gx</b>		<b>MTH BLK</b>	<b>DMW-1S-GW-21</b>	<b>DMW-1S-GW-22</b>	<b>HMW-3D</b>	<b>HMW-2S</b>
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19

**NWTPH-Gx, mg/L**

Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd
Gasoline	0.10	nd	0.35	0.30	nd	nd

Surrogate recoveries:

Trifluorotoluene	92%	89%	98%	94%	96%
Bromofluorobenzene	82%	96%	92%	93%	92%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

NWTPH-Gx		HMW-2D	HMW-31A	HMW-41A	HMW-1S-GW	HMW-1D-GW
Matrix	Water	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/25/19	03/25/19	03/25/19	03/25/19	03/25/19

NWTPH-Gx, mg/L

Mineral spirits/Stoddard	0.10	nd	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd	nd

Surrogate recoveries:

Trifluorotoluene	93%	98%	83%	90%	84%
Bromofluorobenzene	91%	89%	73%	92%	95%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results					Dupl
NWTPH-Gx		HMW-11B-GW	HMW-21B-GW	HMW-21A-GW	HMW-21A-GW
Matrix	Water	Water	Water	Water	Water
Date analyzed	Reporting Limits	03/25/19	03/25/19	03/25/19	03/25/19

<u>NWTPH-Gx, mg/L</u>					
Mineral spirits/Stoddard	0.10	nd	nd	nd	nd
Gasoline	0.10	nd	nd	nd	nd

Surrogate recoveries:					
Trifluorotoluene		82%	97%	98%	110%
Bromofluorobenzene		97%	98%	98%	93%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 Acceptable Recovery limits: 70% TO 130%  
 Acceptable RPD limit: 30%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results

PAH(8270), ug/L		MTH BLK	LCS	DMW-1S-GW-21	DMW-1S-GW-22
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	03/27/19	03/27/19	03/27/19	03/27/19
Date analyzed	Limits	03/27/19	03/27/19	03/27/19	03/27/19
Naphthalene	0.1	nd		nd	nd
1-MethylNaphthalene	0.1	nd		nd	nd
2-MethylNaphthalene	0.1	nd		nd	nd
Acenaphthylene	0.1	nd		nd	nd
Acenaphthene	0.1	nd	94%	nd	nd
Fluorene	0.1	nd		nd	nd
Phenanthrene	0.1	nd		nd	nd
Anthracene	0.1	nd		nd	nd
Fluoranthene	0.1	nd		nd	nd
Pyrene	0.1	nd	98%	nd	nd
Benzo(a)anthracene	0.1	nd		nd	nd
Chrysene	0.1	nd		nd	nd
Benzo(b)fluoranthene	0.1	nd		nd	nd
Benzo(k)fluoranthene	0.1	nd		nd	nd
Benzo(a)pyrene	0.1	nd		nd	nd
Indeno(1,2,3-cd)pyrene	0.1	nd		nd	nd
Dibenzo(ah)anthracene	0.1	nd		nd	nd
Benzo(ghi)perylene	0.1	nd		nd	nd

Surrogate recoveries:

Fluorobiphenyl	116%	110%	96%	126%
o-Terphenyl	98%	95%	96%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%

AAL Job Number: C90325-3  
 Client: Hart Crowser, Inc.  
 Project Manager: Roy Jensen  
 Client Project Name: MMB  
 Client Project Number: 19409-01  
 Date received: 03/25/19

Analytical Results		MS	MSD	RPD
PAH(8270), ug/L		DMW-1S-GW-22	DMW-1S-GW-22	DMW-1S-GW-22
Matrix	Water	Water	Water	Water
Date extracted	Reporting	03/27/19	03/27/19	03/27/19
Date analyzed	Limits	03/27/19	03/27/19	03/27/19
Naphthalene	0.1			
1-Methylnaphthalene	0.1			
2-Methylnaphthalene	0.1			
Acenaphthylene	0.1			
Acenaphthene	0.1	93%	96%	3%
Fluorene	0.1			
Phenanthrene	0.1			
Anthracene	0.1			
Fluoranthene	0.1			
Pyrene	0.1	108%	103%	5%
Benzo(a)anthracene	0.1			
Chrysene	0.1			
Benzo(b)fluoranthene	0.1			
Benzo(k)fluoranthene	0.1			
Benzo(a)pyrene	0.1			
Indeno(1,2,3-cd)pyrene	0.1			
Dibenzo(ah)anthracene	0.1			
Benzo(ghi)perylene	0.1			

Surrogate recoveries:

Fluorobiphenyl	107%	105%
o-Terphenyl	94%	96%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 50%





# Sample Custody Record

Samples Shipped to: AAL



C90325-3

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940901</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>Moy Jensen</u> SAMPLED BY: <u>B. Dozier</u>						REQUESTED ANALYSIS <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-G</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Dx</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs</div> </div>												NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS				
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																		
	<del>HMW</del>	<del>1S-GW</del>	3/20/19	1320	water	X	X	X															
	HMW	1D-GW	3/20/19	1200	L	X	X	X															
	HMW	1B-GW	3/20/19	1128	L	X	X	X															
	HMW	21B-GW	3/20/19	1034	L	X	X	X															
	HMW	21A-GW	3/20/19	1000	L	X	X	X															
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:												TOTAL NUMBER OF CONTAINERS					
SIGNATURE <u>B. Dozier</u>		TIME <u>1300</u>	SIGNATURE <u>V. Jensen</u>		TIME <u>03/25/19</u>													SAMPLE RECEIPT INFORMATION					
PRINT NAME <u>HC</u>			PRINT NAME <u>AAL</u>			CUSTODY SEALS:																	
COMPANY <u>1300</u>			COMPANY <u>13:00</u>			<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT																	
RELINQUISHED BY		DATE	RECEIVED BY		DATE	COOLER NO.:						STORAGE LOCATION:						TURNAROUND TIME:					
SIGNATURE		TIME	SIGNATURE		TIME	See Lab Work Order No. _____						for Other Contract Requirements						<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____					
PRINT NAME			PRINT NAME																				
COMPANY			COMPANY																				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

March 9, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the results from the testing of material submitted on February 27, 2020 from the 601/615 Dexter/MMB 1940904, F&BI 002417 project. There are 80 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: Becca Dozier  
HCR0309R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 601/615 Dexter/MMB 1940904, F&BI 002417 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
002417 -01	DMW-4S-5
002417 -02	DMW-4S-10
002417 -03	DMW-4S-15
002417 -04	DMW-4S-20
002417 -05	DMW-4S-25
002417 -06	DMW-4S-30
002417 -07	MBB-8-5
002417 -08	MBB-8-10
002417 -09	MBB-8-15
002417 -10	MBB-8-15 dup
002417 -11	MBB-8-20
002417 -12	MBB-8-25
002417 -13	MBB-9-5
002417 -14	MBB-9-10
002417 -15	MBB-9-15
002417 -16	MBB-9-20
002417 -17	MBB-9-25
002417 -18	MBB-6R-5
002417 -19	MBB-10-5
002417 -20	MBB-10-10
002417 -21	MBB-10-15
002417 -22	MBB-10-20
002417 -23	MBB-10-25
002417 -24	Trip Blank

The 8260D calibration standard failed the acceptance criteria for hexachlorobutadiene in sample MBB-9-20. The data were flagged accordingly.

The 8260D sample and duplicate relative percent difference (RPD) of o-xylene did not pass the acceptance criteria. The RPD passed the acceptance criteria for the laboratory control sample and laboratory control sample duplicate, therefore the results are likely due to sample inhomogeneity.

The 8260D analysis of sample MBB-8-15 showed the presence of methylene chloride. The data were qualified as laboratory contamination.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/28/20

Date Analyzed: 02/28/20 and 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-132)
DMW-4S-5 002417-01	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-4S-10 002417-02	<0.02	<0.02	<0.02	<0.06	<5	88
DMW-4S-15 002417-03	<0.02	<0.02	<0.02	<0.06	<5	88
DMW-4S-20 002417-04	<0.02	<0.02	<0.02	<0.06	<5	88
DMW-4S-25 002417-05	<0.02	0.046	0.13	0.25	35	81
DMW-4S-30 002417-06	<0.02	<0.02	<0.02	<0.06	<5	85
MBB-8-5 002417-07	<0.02	<0.02	<0.02	<0.06	<5	87
MBB-8-10 002417-08	<0.02	<0.02	<0.02	<0.06	<5	87
MBB-8-15 002417-09	<0.02	<0.02	<0.02	<0.06	<5	87
MBB-8-15 dup 002417-10	<0.02	<0.02	<0.02	<0.06	<5	88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/28/20

Date Analyzed: 02/28/20 and 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-132)
MBB-8-20 002417-11	<0.02	<0.02	<0.02	<0.06	<5	88
MBB-8-25 002417-12	<0.02	<0.02	<0.02	<0.06	<5	88
MBB-9-5 002417-13	<0.02	<0.02	<0.02	<0.06	<5	85
MBB-9-10 002417-14	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-9-15 002417-15	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-9-20 002417-16	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-9-25 002417-17	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-10-5 002417-19	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-10-10 002417-20	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-10-15 002417-21	<0.02	<0.02	<0.02	<0.06	<5	81

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/28/20

Date Analyzed: 02/28/20 and 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-132)
MBB-10-20 002417-22	<0.02	<0.02	<0.02	<0.06	<5	81
MBB-10-25 002417-23	<0.02	<0.02	<0.02	<0.06	<5	81
Method Blank 00-388 MB	<0.02	<0.02	<0.02	<0.06	<5	94
Method Blank 00-389 MB	<0.02	<0.02	<0.02	<0.06	<5	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/28/20

Date Analyzed: 02/28/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
Trip Blank 002417-24	<1	<1	<1	<3	86
Method Blank 00-386 MB	<1	<1	<1	<3	88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/27/20

Date Analyzed: 02/27/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
DMW-4S-5 002417-01	<50	<250	81
DMW-4S-10 002417-02	<50	<250	82
DMW-4S-15 002417-03	<50	<250	81
DMW-4S-20 002417-04	<50	<250	81
DMW-4S-25 002417-05	<50	<250	82
DMW-4S-30 002417-06	<50	<250	90
MBB-8-5 002417-07	<50	<250	82
MBB-8-10 002417-08	<50	<250	83
MBB-8-15 002417-09	<50	<250	83
MBB-8-15 dup 002417-10	<50	<250	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/27/20

Date Analyzed: 02/27/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
MBB-8-20 002417-11	<50	<250	82
MBB-8-25 002417-12	<50	<250	83
MBB-9-5 002417-13	<50	320	81
MBB-9-10 002417-14	<50	<250	82
MBB-9-15 002417-15	<50	<250	81
MBB-9-20 002417-16	<50	<250	84
MBB-9-25 002417-17	<50	<250	83
MBB-10-5 002417-19	<50	<250	83
MBB-10-10 002417-20	<50	<250	83
MBB-10-15 002417-21	<50	<250	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

Date Extracted: 02/27/20

Date Analyzed: 02/27/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
MBB-10-20 002417-22	<50	<250	87
MBB-10-25 002417-23	<50	<250	91
Method Blank 00-479 MB	<50	<250	86
Method Blank 00-506 MB	<50	<250	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-01
Date Analyzed:	03/02/20	Data File:	002417-01.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.91
Cadmium	<1
Chromium	30.3
Lead	10.0
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-02
Date Analyzed:	03/02/20	Data File:	002417-02.040
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.88
Cadmium	<1
Chromium	19.8
Lead	2.00
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-03
Date Analyzed:	03/03/20	Data File:	002417-03.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.39
Cadmium	<1
Chromium	19.8
Lead	1.86
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-04
Date Analyzed:	03/03/20	Data File:	002417-04.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.29
Cadmium	<1
Chromium	14.3
Lead	1.23
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-05
Date Analyzed:	03/03/20	Data File:	002417-05.050
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.39
Cadmium	<1
Chromium	17.5
Lead	1.49
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S-30	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-06
Date Analyzed:	03/02/20	Data File:	002417-06.138
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.18
Cadmium	<1
Chromium	13.1
Lead	1.20
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-07
Date Analyzed:	03/02/20	Data File:	002417-07.139
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	21.9
Cadmium	<1
Chromium	18.2
Lead	12.5
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-08
Date Analyzed:	03/02/20	Data File:	002417-08.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.75
Cadmium	<1
Chromium	13.2
Lead	1.22
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-09
Date Analyzed:	03/02/20	Data File:	002417-09.141
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.70
Cadmium	<1
Chromium	19.2
Lead	1.26
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-15 dup	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-10
Date Analyzed:	03/02/20	Data File:	002417-10.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.60
Cadmium	<1
Chromium	15.3
Lead	1.23
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-11
Date Analyzed:	03/02/20	Data File:	002417-11.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.60
Cadmium	<1
Chromium	14.3
Lead	1.30
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-12
Date Analyzed:	03/02/20	Data File:	002417-12.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.13
Cadmium	<1
Chromium	16.3
Lead	1.31
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-13
Date Analyzed:	03/02/20	Data File:	002417-13.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	9.58
Cadmium	<1
Chromium	16.7
Lead	13.4
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-14
Date Analyzed:	03/02/20	Data File:	002417-14.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.94
Cadmium	<1
Chromium	18.8
Lead	2.11
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-15
Date Analyzed:	03/02/20	Data File:	002417-15.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.72
Cadmium	<1
Chromium	14.7
Lead	1.22
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-16
Date Analyzed:	03/02/20	Data File:	002417-16.154
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.70
Cadmium	<1
Chromium	18.1
Lead	1.24
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-17
Date Analyzed:	03/02/20	Data File:	002417-17.155
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.27
Cadmium	<1
Chromium	17.3
Lead	1.31
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-19
Date Analyzed:	03/02/20	Data File:	002417-19.163
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.76
Cadmium	<1
Chromium	17.3
Lead	1.72
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-20
Date Analyzed:	03/02/20	Data File:	002417-20.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.32
Cadmium	<1
Chromium	25.5
Lead	1.89
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-21
Date Analyzed:	03/02/20	Data File:	002417-21.165
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.65
Cadmium	<1
Chromium	17.1
Lead	1.46
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-22
Date Analyzed:	03/02/20	Data File:	002417-22.166
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.40
Cadmium	<1
Chromium	15.0
Lead	1.19
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-23
Date Analyzed:	03/02/20	Data File:	002417-23.167
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.51
Cadmium	<1
Chromium	20.8
Lead	1.57
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	I0-124 mb
Date Analyzed:	03/02/20	Data File:	I0-124 mb.090
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	I0-125 mb
Date Analyzed:	03/02/20	Data File:	I0-125 mb.088
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-01
Date Analyzed:	02/28/20	Data File:	022829.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-02
Date Analyzed:	02/28/20	Data File:	022830.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-03
Date Analyzed:	02/28/20	Data File:	022831.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-04
Date Analyzed:	02/28/20	Data File:	022832.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-05
Date Analyzed:	02/28/20	Data File:	022833.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.016
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-4S-30	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-06
Date Analyzed:	02/28/20	Data File:	022834.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-07
Date Analyzed:	02/28/20	Data File:	022835.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	107	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-08
Date Analyzed:	02/28/20	Data File:	022836.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-09
Date Analyzed:	02/28/20	Data File:	022837.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.030 lc j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-15 dup	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-10
Date Analyzed:	02/28/20	Data File:	022838.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-11
Date Analyzed:	02/28/20	Data File:	022839.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-8-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-12
Date Analyzed:	02/28/20	Data File:	022840.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	92	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-9-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-13
Date Analyzed:	02/28/20	Data File:	022841.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-9-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-14
Date Analyzed:	02/28/20	Data File:	022842.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-9-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-15
Date Analyzed:	02/28/20	Data File:	022843.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-9-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-16
Date Analyzed:	03/04/20	Data File:	030428.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-9-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-17
Date Analyzed:	02/28/20	Data File:	022845.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-10-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-19
Date Analyzed:	02/28/20	Data File:	022847.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-10-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-20
Date Analyzed:	02/28/20	Data File:	022848.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-10-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-21
Date Analyzed:	03/03/20	Data File:	030319.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-10-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-22
Date Analyzed:	03/03/20	Data File:	030320.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-10-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	002417-23
Date Analyzed:	03/03/20	Data File:	030321.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	02/28/20	Lab ID:	00-484 mb
Date Analyzed:	02/28/20	Data File:	022828.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/03/20	Lab ID:	00-499 mb
Date Analyzed:	03/03/20	Data File:	030314.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Trip Blank	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-24
Date Analyzed:	03/02/20	Data File:	030249.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.04
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.1		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	00-489 mb
Date Analyzed:	03/02/20	Data File:	030212.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-5	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-01 1/5
Date Analyzed:	03/02/20	Data File:	030218.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	95	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	0.025
Pyrene	0.023
Benz(a)anthracene	0.012
Chrysene	0.015
Benzo(a)pyrene	0.010
Benzo(b)fluoranthene	0.015
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-10	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-02 1/5
Date Analyzed:	03/02/20	Data File:	030220.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-15	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-03 1/5
Date Analyzed:	03/02/20	Data File:	030221.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	31	163
Benzo(a)anthracene-d12	91	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-20	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-04 1/5
Date Analyzed:	03/02/20	Data File:	030222.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	72	31	163
Benzo(a)anthracene-d12	87	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-25	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-05 1/5
Date Analyzed:	03/02/20	Data File:	030223.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	163
Benzo(a)anthracene-d12	82	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.014
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S-30	Client:	Hart Crowser
Date Received:	02/27/20	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	002417-06 1/5
Date Analyzed:	03/02/20	Data File:	030224.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	72	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	601/615 Dexter/MMB 1940904
Date Extracted:	03/02/20	Lab ID:	00-512 mb 1/5
Date Analyzed:	03/02/20	Data File:	030217.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES, AND TPH AS GASOLINE  
USING METHOD 8021B AND NWTPH-G<sub>x</sub>**

Laboratory Code: 002398-01 (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)	0.5	91	66-121
Toluene	mg/kg (ppm)	0.5	96	72-128
Ethylbenzene	mg/kg (ppm)	0.5	100	69-132
Xylenes	mg/kg (ppm)	1.5	100	69-131
Gasoline	mg/kg (ppm)	20	110	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE,  
XYLENES, AND TPH AS GASOLINE  
USING METHOD 8021B AND NWTPH-G<sub>x</sub>**

Laboratory Code: 002417-01 (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)	0.5	90	69-120
Toluene	mg/kg (ppm)	0.5	90	70-117
Ethylbenzene	mg/kg (ppm)	0.5	92	65-123
Xylenes	mg/kg (ppm)	1.5	90	66-120
Gasoline	mg/kg (ppm)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 002442-01 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	65-118
Toluene	ug/L (ppb)	50	103	72-122
Ethylbenzene	ug/L (ppb)	50	104	73-126
Xylenes	ug/L (ppb)	150	104	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002401-01 (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	1,100	82	92	73-135	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	74-139

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

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Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002417-01 (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	<50	88	88	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	88	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

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

Laboratory Code: 002417-01 (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	1.78	75	80	75-125	6
Cadmium	mg/kg (ppm)	10	<1	96	103	75-125	7
Chromium	mg/kg (ppm)	50	28.1	79	94	75-125	17
Lead	mg/kg (ppm)	50	9.30	88	96	75-125	9
Mercury	mg/kg (ppm)	5	<1	93	101	75-125	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	85	80-120
Cadmium	mg/kg (ppm)	10	106	80-120
Chromium	mg/kg (ppm)	50	108	80-120
Lead	mg/kg (ppm)	50	115	80-120
Mercury	mg/kg (ppm)	5	112	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

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

Laboratory Code: 002417-23 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	81	82	75-125	1
Cadmium	mg/kg (ppm)	10	<5	97	96	75-125	1
Chromium	mg/kg (ppm)	50	18.9	85	82	75-125	4
Lead	mg/kg (ppm)	50	<5	97	96	75-125	1
Mercury	mg/kg (ppm)	5	<5	82	95	75-125	15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	82	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	108	80-120
Mercury	mg/kg (ppm)	5	107	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 002417-20 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02 j	<0.02 j	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	97	103	58-137	6
Vinyl chloride	mg/kg (ppm)	0.05	90	97	60-136	7
Chloroethane	mg/kg (ppm)	0.05	92	101	65-132	9
Trichlorofluoromethane	mg/kg (ppm)	0.05	95	103	66-133	8
1,1-Dichloroethene	mg/kg (ppm)	0.05	89	93	70-130	4
Methylene chloride	mg/kg (ppm)	0.05	91	96	52-150	5
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	94	93	70-130	1
1,1-Dichloroethane	mg/kg (ppm)	0.05	95	94	70-130	1
2,2-Dichloropropane	mg/kg (ppm)	0.05	92	93	70-130	1
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	94	93	70-130	1
Chloroform	mg/kg (ppm)	0.05	94	93	70-130	1
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	93	92	70-130	1
1,1-Dichloropropene	mg/kg (ppm)	0.05	98	92	70-130	6
Carbon tetrachloride	mg/kg (ppm)	0.05	92	91	70-130	1
Benzene	mg/kg (ppm)	0.05	96	91	70-130	5
Trichloroethene	mg/kg (ppm)	0.05	98	92	70-130	6
1,2-Dichloropropane	mg/kg (ppm)	0.05	98	90	70-130	9
Bromodichloromethane	mg/kg (ppm)	0.05	98	94	70-130	4
Toluene	mg/kg (ppm)	0.05	98	88	70-130	11
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	99	93	70-130	6
1,3-Dichloropropane	mg/kg (ppm)	0.05	98	92	70-130	6
Tetrachloroethene	mg/kg (ppm)	0.05	94	83	70-130	12
Dibromochloromethane	mg/kg (ppm)	0.05	101	99	70-130	2
Chlorobenzene	mg/kg (ppm)	0.05	93	86	70-130	8
Ethylbenzene	mg/kg (ppm)	0.05	95	85	70-130	11
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	102	97	70-130	5
m,p-Xylene	mg/kg (ppm)	0.1	95	86	70-130	10
o-Xylene	mg/kg (ppm)	0.05	98	89	70-130	10
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	96	93	70-130	3
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	97	96	70-130	1
2-Chlorotoluene	mg/kg (ppm)	0.05	94	84	70-130	11
4-Chlorotoluene	mg/kg (ppm)	0.05	92	83	70-130	10
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	94	84	70-130	11
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	92	84	70-130	9
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	90	83	70-130	8
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	92	86	70-130	7
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	96	96	70-130	0
Hexachlorobutadiene	mg/kg (ppm)	0.05	95	82	70-130	15
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	90	89	65-131	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 002445-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02 j	<0.02 j	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	0.031	145 nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	0.11	167 nm
o-Xylene	mg/kg (ppm)	0.0067	0.073	166 vo
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.020	0.40	181 b
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	108	94	58-137	14
Vinyl chloride	mg/kg (ppm)	0.05	100	89	60-136	12
Chloroethane	mg/kg (ppm)	0.05	105	90	65-132	15
Trichlorofluoromethane	mg/kg (ppm)	0.05	100	90	66-133	11
1,1-Dichloroethene	mg/kg (ppm)	0.05	100	88	70-130	13
Methylene chloride	mg/kg (ppm)	0.05	124	125	52-150	1
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	103	92	70-130	11
1,1-Dichloroethane	mg/kg (ppm)	0.05	102	97	70-130	5
2,2-Dichloropropane	mg/kg (ppm)	0.05	104	95	70-130	9
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	102	97	70-130	5
Chloroform	mg/kg (ppm)	0.05	100	96	70-130	4
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	102	93	70-130	9
1,1-Dichloropropene	mg/kg (ppm)	0.05	88	93	70-130	6
Carbon tetrachloride	mg/kg (ppm)	0.05	99	91	70-130	8
Benzene	mg/kg (ppm)	0.05	97	98	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	89	94	70-130	5
1,2-Dichloropropane	mg/kg (ppm)	0.05	104	104	70-130	0
Bromodichloromethane	mg/kg (ppm)	0.05	101	102	70-130	1
Toluene	mg/kg (ppm)	0.05	93	96	70-130	3
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	95	102	70-130	7
1,3-Dichloropropane	mg/kg (ppm)	0.05	97	103	70-130	6
Tetrachloroethene	mg/kg (ppm)	0.05	86	91	70-130	6
Dibromochloromethane	mg/kg (ppm)	0.05	98	102	70-130	4
Chlorobenzene	mg/kg (ppm)	0.05	94	95	70-130	1
Ethylbenzene	mg/kg (ppm)	0.05	96	94	70-130	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	101	98	70-130	3
m,p-Xylene	mg/kg (ppm)	0.1	96	94	70-130	2
o-Xylene	mg/kg (ppm)	0.05	99	94	70-130	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	89	95	70-130	7
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	88	94	70-130	7
2-Chlorotoluene	mg/kg (ppm)	0.05	96	94	70-130	2
4-Chlorotoluene	mg/kg (ppm)	0.05	95	94	70-130	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	95	91	70-130	4
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	96	92	70-130	4
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	95	91	70-130	4
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	98	92	70-130	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	82	83	70-130	1
Hexachlorobutadiene	mg/kg (ppm)	0.05	83	74	70-130	11
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	96	85	65-131	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

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

Laboratory Code: 002464-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chloromethane	ug/L (ppb)	50	<10	74	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	79	36-166
Chloroethane	ug/L (ppb)	50	<1	85	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	90	44-165
1,1-Dichloroethene	ug/L (ppb)	50	<1	89	60-136
Methylene chloride	ug/L (ppb)	50	<5	87	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	90	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	89	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	97	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	71-127
Chloroform	ug/L (ppb)	50	<1	92	65-132
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	89	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	101	56-152
Benzene	ug/L (ppb)	50	<0.35	87	76-125
Trichloroethene	ug/L (ppb)	50	<1	86	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	91	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Toluene	ug/L (ppb)	50	2.0	97	76-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	68-131
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	113	70-139
Chlorobenzene	ug/L (ppb)	50	<1	96	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	112	73-137
m,p-Xylene	ug/L (ppb)	100	2.2	99	69-135
o-Xylene	ug/L (ppb)	50	1.3	99	60-140
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	102	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	99	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	99	65-130
1,2,4-Trimethylbenzene	ug/L (ppb)	50	1.9	101	59-146
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	105	32-164
Hexachlorobutadiene	ug/L (ppb)	50	<1	95	60-143
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	98	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**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)	50	89	83	45-156	7
Vinyl chloride	ug/L (ppb)	50	92	84	50-154	9
Chloroethane	ug/L (ppb)	50	90	86	58-146	5
Trichlorofluoromethane	ug/L (ppb)	250	94	91	50-150	3
1,1-Dichloroethene	ug/L (ppb)	50	93	91	67-136	2
Methylene chloride	ug/L (ppb)	50	89	90	39-148	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	88	89	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	90	90	79-121	0
2,2-Dichloropropane	ug/L (ppb)	50	98	96	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	94	80-123	2
Chloroform	ug/L (ppb)	50	93	93	80-121	0
1,1,1-Trichloroethane	ug/L (ppb)	50	95	96	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	92	93	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	103	105	75-158	2
Benzene	ug/L (ppb)	50	90	91	69-134	1
Trichloroethene	ug/L (ppb)	50	89	90	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	96	98	77-123	2
Bromodichloromethane	ug/L (ppb)	50	105	106	81-133	1
Toluene	ug/L (ppb)	50	98	101	72-122	3
1,1,2-Trichloroethane	ug/L (ppb)	50	108	110	75-124	2
1,3-Dichloropropane	ug/L (ppb)	50	104	107	76-126	3
Tetrachloroethene	ug/L (ppb)	50	98	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	120	121	84-133	1
Chlorobenzene	ug/L (ppb)	50	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	102	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	84-127	1
m,p-Xylene	ug/L (ppb)	100	100	102	81-112	2
o-Xylene	ug/L (ppb)	50	100	99	81-121	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	112	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	103	107	67-124	4
2-Chlorotoluene	ug/L (ppb)	50	101	105	77-127	4
4-Chlorotoluene	ug/L (ppb)	50	102	106	78-128	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	106	79-122	1
1,3-Dichlorobenzene	ug/L (ppb)	50	100	101	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	50	98	100	83-107	2
1,2-Dichlorobenzene	ug/L (ppb)	50	98	98	84-112	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	116	112	57-141	4
Hexachlorobutadiene	ug/L (ppb)	50	101	96	53-141	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	96	65-136	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/09/20

Date Received: 02/27/20

Project: 601/615 Dexter/MMB 1940904, F&BI 002417

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

Laboratory Code: 002417-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	77	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	86	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	81	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	90	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	83	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	85	32-124
Fluoranthene	mg/kg (ppm)	0.17	0.023	96	16-160
Pyrene	mg/kg (ppm)	0.17	0.021	94	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	0.011	92	23-144
Chrysene	mg/kg (ppm)	0.17	0.014	85	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.014	83	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	76	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	0.0097	89	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	75	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	72	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	63	37-133

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)	0.17	85	84	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	93	90	54-121	3
Acenaphthene	mg/kg (ppm)	0.17	90	89	54-123	1
Fluorene	mg/kg (ppm)	0.17	101	95	56-127	6
Phenanthrene	mg/kg (ppm)	0.17	90	92	55-122	2
Anthracene	mg/kg (ppm)	0.17	87	87	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	92	90	54-129	2
Pyrene	mg/kg (ppm)	0.17	97	96	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	93	90	51-115	3
Chrysene	mg/kg (ppm)	0.17	96	93	55-129	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	82	80	56-123	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	83	85	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	79	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	73	84	49-148	14
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	72	82	50-141	13
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	70	79	52-131	12

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.







FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
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March 11, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the results from the testing of material submitted on February 28, 2020 from the MMB, F&BI 002468 project. There are 101 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: Becca Dozier  
HCR0311R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 28, 2020 by Friedman & Bruya, Inc. from the Hart Crowser MMB, F&BI 002468 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
002468 -01	HMW5IB-5
002468 -02	HMW5IB-10
002468 -03	HMW5IB-15
002468 -04	HMW5IB-20
002468 -05	HMW5IB-25
002468 -06	HMW5IB-30
002468 -07	HMW5IB-35
002468 -08	HMW7IB-5
002468 -09	HMW7IB-10
002468 -10	HMW7IB-15
002468 -11	HMW7IB-20
002468 -12	HMW7IB-25
002468 -13	HMW7IB-25a
002468 -14	HMW9IA-5
002468 -15	HMW9IA-10
002468 -16	HMW9IA-15
002468 -17	HMW9IA-20
002468 -18	HMW9IA-25
002468 -19	HMW9IB-5
002468 -20	HMW9IB-13
002468 -21	HMW9IB-15
002468 -22	HMW9IB-20
002468 -23	HMW9IB-25
002468 -24	Trip blank 0228
002468 -25	DMW-5IA-5
002468 -26	DMW-5IA-10
002468 -27	DMW-5IA-15
002468 -28	DMW-5IA-20
002468 -29	DMW-5IA-25
002468 -30	MBB-9-GW

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

Methylene chloride was detected in the 8260D analysis of samples HMW9IB-15, HMW9IB-25. The data were flagged as due to laboratory contamination.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/05/20  
Date Analyzed: 03/06/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
MBB-9-GW 002468-30	<100	92
Method Blank 00-394 MB	<100	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/03/20  
Date Analyzed: 03/03/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW5IB-5 002468-01	<5	92
HMW5IB-10 002468-02	<5	92
HMW5IB-15 002468-03	<5	90
HMW5IB-20 002468-04	<5	91
HMW5IB-25 002468-05	<5	92
HMW7IB-5 002468-08	<5	92
HMW7IB-10 002468-09	<5	92
HMW7IB-15 002468-10	<5	92
HMW7IB-20 002468-11	<5	90
HMW7IB-25 002468-12	<5	92
HMW7IB-25a 002468-13	<5	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/03/20  
Date Analyzed: 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW9IA-5 002468-14	<5	88
HMW9IA-10 002468-15	<5	91
HMW9IA-15 002468-16	<5	98
HMW9IA-20 002468-17	<5	97
HMW9IA-25 002468-18	<5	96
HMW9IB-5 002468-19	<5	97
HMW9IB-13 002468-20	<5	99
HMW9IB-15 002468-21	<5	98
HMW9IB-20 002468-22	<5	96
HMW9IB-25 002468-23	<5	100
DMW-5IA-5 002468-25	<5	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/03/20  
Date Analyzed: 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
DMW-5IA-10 002468-26	<5	96
DMW-5IA-15 002468-27	<5	99
DMW-5IA-20 002468-28	<5	98
DMW-5IA-25 002468-29	<5	98
Method Blank 00-395 MB	<5	97
Method Blank 00-396 MB	<5	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468  
 Date Extracted: 03/02/20  
 Date Analyzed: 03/02/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL AND MOTOR OIL  
 USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW5IB-5 002468-01	<50	<250	89
HMW5IB-10 002468-02	<50	<250	88
HMW5IB-15 002468-03	<50	<250	89
HMW5IB-20 002468-04	<50	<250	89
HMW5IB-25 002468-05	<50	<250	99
HMW7IB-5 002468-08	69 x	760	89
HMW7IB-10 002468-09	94 x	860	91
HMW7IB-15 002468-10	<50	<250	91
HMW7IB-20 002468-11	<50	440	90
HMW7IB-25 002468-12	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468  
 Date Extracted: 03/02/20  
 Date Analyzed: 03/02/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL AND MOTOR OIL  
 USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW7IB-25a 002468-13	<50	<250	88
HMW9IA-5 002468-14	<50	<250	90
HMW9IA-10 002468-15	<50	<250	89
HMW9IA-15 002468-16	<50	<250	89
HMW9IA-20 002468-17	<50	<250	99
HMW9IA-25 002468-18	<50	<250	90
HMW9IB-5 002468-19	<50	1,100	98
HMW9IB-13 002468-20	<50	<250	90
HMW9IB-15 002468-21	<50	<250	98
HMW9IB-20 002468-22	<50	<250	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 56-165)
HMW9IB-25 002468-23	<50	<250	89
DMW-5IA-5 002468-25	<50	<250	88
DMW-5IA-10 002468-26	<50	<250	89
DMW-5IA-15 002468-27	<50	<250	91
DMW-5IA-20 002468-28	<50	<250	89
DMW-5IA-25 002468-29	<50	<250	89
Method Blank 00-516 MB	<50	<250	89
Method Blank 00-520 MB	<50	<250	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 47-140)
MBB-9-GW 002468-30	220 x	290 x	119
Method Blank 00-518 MB	<50	<250	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW5IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-01
Date Analyzed:	03/04/20	Data File:	002468-01.128
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.55
Cadmium	<1
Chromium	12.2
Lead	1.11
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW5IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-02
Date Analyzed:	03/04/20	Data File:	002468-02.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.31
Cadmium	<1
Chromium	16.0
Lead	1.18
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW5IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-03
Date Analyzed:	03/04/20	Data File:	002468-03.071
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.26
Cadmium	<1
Chromium	16.9
Lead	1.06
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW5IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-04
Date Analyzed:	03/04/20	Data File:	002468-04.072
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.03
Cadmium	<1
Chromium	12.5
Lead	1.11
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW5IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-05
Date Analyzed:	03/04/20	Data File:	002468-05.073
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	11.3
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-08
Date Analyzed:	03/04/20	Data File:	002468-08.141
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	15.3
Cadmium	<1
Chromium	22.4
Lead	17.4
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-09
Date Analyzed:	03/04/20	Data File:	002468-09.142
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.8
Cadmium	<1
Chromium	18.4
Lead	25.2
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-10
Date Analyzed:	03/04/20	Data File:	002468-10.145
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	19.9
Cadmium	<1
Chromium	18.3
Lead	18.2
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-11
Date Analyzed:	03/04/20	Data File:	002468-11.146
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	25.6
Cadmium	<1
Chromium	19.1
Lead	18.4
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-12
Date Analyzed:	03/04/20	Data File:	002468-12.147
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.13
Cadmium	<1
Chromium	18.9
Lead	6.75
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW7IB-25a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-13
Date Analyzed:	03/04/20	Data File:	002468-13.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.49
Cadmium	<1
Chromium	25.9
Lead	7.93
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-14
Date Analyzed:	03/04/20	Data File:	002468-14.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.07
Cadmium	<1
Chromium	15.0
Lead	1.27
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-15
Date Analyzed:	03/04/20	Data File:	002468-15.150
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.41
Cadmium	<1
Chromium	11.3
Lead	2.52
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-16
Date Analyzed:	03/04/20	Data File:	002468-16.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.62
Cadmium	<1
Chromium	16.9
Lead	14.1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-17
Date Analyzed:	03/04/20	Data File:	002468-17.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.74
Cadmium	<1
Chromium	13.2
Lead	1.32
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-18
Date Analyzed:	03/04/20	Data File:	002468-18.123
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.23
Cadmium	<1
Chromium	13.1
Lead	1.20
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-19
Date Analyzed:	03/04/20	Data File:	002468-19.124
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	7.75
Cadmium	<1
Chromium	17.3
Lead	7.89
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IB-13	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-20
Date Analyzed:	03/04/20	Data File:	002468-20.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.64
Cadmium	<1
Chromium	10.9
Lead	1.90
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-21
Date Analyzed:	03/04/20	Data File:	002468-21.126
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	17.8
Cadmium	<1
Chromium	18.5
Lead	11.3
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	002468-22
Date Analyzed:	03/04/20	Data File:	002468-22.127
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.60
Cadmium	<1
Chromium	13.6
Lead	1.29
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW9IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-23
Date Analyzed:	03/05/20	Data File:	002468-23.194
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.26
Cadmium	<1
Chromium	14.5
Lead	1.39
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-25
Date Analyzed:	03/05/20	Data File:	002468-25.199
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.73
Cadmium	<1
Chromium	15.6
Lead	2.33
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-26
Date Analyzed:	03/06/20	Data File:	002468-26.200
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.00
Cadmium	<1
Chromium	20.7
Lead	2.56
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-27
Date Analyzed:	03/06/20	Data File:	002468-27.201
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.54
Cadmium	<1
Chromium	12.0
Lead	1.20
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-28
Date Analyzed:	03/06/20	Data File:	002468-28.202
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.76
Cadmium	<1
Chromium	19.2
Lead	1.29
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-29
Date Analyzed:	03/06/20	Data File:	002468-29.203
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.35
Cadmium	<1
Chromium	12.1
Lead	1.11
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	I0-128 mb
Date Analyzed:	03/04/20	Data File:	I0-128 mb.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	I0-130 mb2
Date Analyzed:	03/05/20	Data File:	I0-130 mb2.167
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-9-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-30
Date Analyzed:	03/05/20	Data File:	002468-30.134
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.59
Cadmium	<1
Chromium	12.0
Lead	1.27
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	I0-138 mb
Date Analyzed:	03/05/20	Data File:	I0-138 mb.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MBB-9-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-30
Date Analyzed:	03/06/20	Data File:	002468-30.230
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.37
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	I0-139 mb
Date Analyzed:	03/06/20	Data File:	I0-139 mb.228
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW5IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-01
Date Analyzed:	03/05/20	Data File:	030527.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW5IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-02
Date Analyzed:	03/05/20	Data File:	030528.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	110	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW5IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-03
Date Analyzed:	03/05/20	Data File:	030529.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW5IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-04
Date Analyzed:	03/05/20	Data File:	030530.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW5IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-05
Date Analyzed:	03/05/20	Data File:	030531.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-08
Date Analyzed:	03/05/20	Data File:	030538.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	107	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-09
Date Analyzed:	03/05/20	Data File:	030539.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	109	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-10
Date Analyzed:	03/05/20	Data File:	030540.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-11
Date Analyzed:	03/09/20	Data File:	030929.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.024 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-12
Date Analyzed:	03/05/20	Data File:	030542.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW7IB-25a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-13
Date Analyzed:	03/05/20	Data File:	030543.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-14
Date Analyzed:	03/05/20	Data File:	030544.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	90	50	150
4-Bromofluorobenzene	87	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-15
Date Analyzed:	03/05/20	Data File:	030545.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	89	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-16
Date Analyzed:	03/05/20	Data File:	030546.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-17
Date Analyzed:	03/05/20	Data File:	030547.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-18
Date Analyzed:	03/05/20	Data File:	030548.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	90	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-19
Date Analyzed:	03/09/20	Data File:	030930.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IB-13	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-20
Date Analyzed:	03/05/20	Data File:	030550.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-21
Date Analyzed:	03/09/20	Data File:	030931.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.032 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-22
Date Analyzed:	03/09/20	Data File:	030932.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW9IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-23
Date Analyzed:	03/05/20	Data File:	030553.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	107	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.032 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-5IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-25
Date Analyzed:	03/05/20	Data File:	030554.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-5IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-26
Date Analyzed:	03/05/20	Data File:	030555.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-5IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-27
Date Analyzed:	03/06/20	Data File:	030556.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-5IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-28
Date Analyzed:	03/06/20	Data File:	030557.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	112	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-5IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	002468-29
Date Analyzed:	03/06/20	Data File:	030558.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	111	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002468
Date Extracted:	03/05/20	Lab ID:	00-503 mb
Date Analyzed:	03/05/20	Data File:	030508.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002468
Date Extracted:	03/04/20	Lab ID:	00-501 mb
Date Analyzed:	03/04/20	Data File:	030413.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Trip blank 0228	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-24
Date Analyzed:	03/03/20	Data File:	030324.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-9-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-30
Date Analyzed:	03/03/20	Data File:	030325.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	00-489 mb
Date Analyzed:	03/02/20	Data File:	030212.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW5IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-01 1/5
Date Analyzed:	03/02/20	Data File:	030225.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	163
Benzo(a)anthracene-d12	93	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW5IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-02 1/5
Date Analyzed:	03/02/20	Data File:	030226.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	163
Benzo(a)anthracene-d12	93	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW5IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-03 1/5
Date Analyzed:	03/02/20	Data File:	030227.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	163
Benzo(a)anthracene-d12	94	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW5IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-04 1/5
Date Analyzed:	03/02/20	Data File:	030228.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	163
Benzo(a)anthracene-d12	93	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW5IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-05 1/5
Date Analyzed:	03/03/20	Data File:	030229.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW7IB-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-08 1/25
Date Analyzed:	03/04/20	Data File:	030340.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89 d	31	163
Benzo(a)anthracene-d12	96 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	0.055
Fluorene	<0.05
Phenanthrene	0.31
Anthracene	0.050
Fluoranthene	0.26
Pyrene	0.30
Benz(a)anthracene	0.085
Chrysene	0.13
Benzo(a)pyrene	0.068
Benzo(b)fluoranthene	0.099
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW7IB-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-09 1/25
Date Analyzed:	03/04/20	Data File:	030339.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.079
Anthracene	<0.05
Fluoranthene	0.18
Pyrene	0.21
Benz(a)anthracene	0.060
Chrysene	0.088
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.072
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW7IB-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-10 1/25
Date Analyzed:	03/04/20	Data File:	030338.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88 d	31	163
Benzo(a)anthracene-d12	101 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.12
Anthracene	0.057
Fluoranthene	1.3
Pyrene	1.4
Benz(a)anthracene	0.76
Chrysene	0.75
Benzo(a)pyrene	0.29
Benzo(b)fluoranthene	0.59
Benzo(k)fluoranthene	0.17
Indeno(1,2,3-cd)pyrene	0.051
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW7IB-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-11 1/25
Date Analyzed:	03/04/20	Data File:	030337.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.065
Anthracene	<0.05
Fluoranthene	0.16
Pyrene	0.16
Benz(a)anthracene	0.052
Chrysene	0.085
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.074
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW7IB-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	002468-12 1/25
Date Analyzed:	03/04/20	Data File:	030334.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87 d	31	163
Benzo(a)anthracene-d12	92 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.18
Anthracene	0.13
Fluoranthene	0.26
Pyrene	0.24
Benz(a)anthracene	0.088
Chrysene	0.12
Benzo(a)pyrene	0.054
Benzo(b)fluoranthene	0.066
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002468
Date Extracted:	03/02/20	Lab ID:	00-512 mb 1/5
Date Analyzed:	03/02/20	Data File:	030217.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 002413-01 (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	108	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 003014-01 (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)	20	100	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 002468-01 (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)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002445-27 (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	55	91	91	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002468-11 (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	340	89	89	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	112	61-133	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468

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

Laboratory Code: 002468-01 (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	1.43	91	93	75-125	2
Cadmium	mg/kg (ppm)	10	<1	100	99	75-125	1
Chromium	mg/kg (ppm)	50	11.3	91	90	75-125	1
Lead	mg/kg (ppm)	50	1.02	97	94	75-125	3
Mercury	mg/kg (ppm)	5	<1	93	89	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	83	80-120
Cadmium	mg/kg (ppm)	10	98	80-120
Chromium	mg/kg (ppm)	50	98	80-120
Lead	mg/kg (ppm)	50	101	80-120
Mercury	mg/kg (ppm)	5	99	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468

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

Laboratory Code: 002468-23 (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	1.18	85	86	75-125	1
Cadmium	mg/kg (ppm)	10	<1	96	96	75-125	0
Chromium	mg/kg (ppm)	50	13.4	87	92	75-125	6
Lead	mg/kg (ppm)	50	1.29	98	99	75-125	1
Mercury	mg/kg (ppm)	5	<1	86	91	75-125	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	94	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	99	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468

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

Laboratory Code: 002447-01 (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	1.79	89	87	75-125	2
Cadmium	ug/L (ppb)	5	<1	94	94	75-125	0
Chromium	ug/L (ppb)	20	<1	91	92	75-125	1
Lead	ug/L (ppb)	10	<1	83	81	75-125	2
Mercury	ug/L (ppb)	5	<1	85	85	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	80-120
Cadmium	ug/L (ppb)	5	96	80-120
Chromium	ug/L (ppb)	20	95	80-120
Lead	ug/L (ppb)	10	96	80-120
Mercury	ug/L (ppb)	5	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002468

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

Laboratory Code: 002445-36 (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	3.11	97	94	75-125	3
Cadmium	ug/L (ppb)	5	<1	94	93	75-125	1
Chromium	ug/L (ppb)	20	<1	98	96	75-125	2
Lead	ug/L (ppb)	10	<1	87	84	75-125	4
Mercury	ug/L (ppb)	5	<1	89	87	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Cadmium	ug/L (ppb)	5	94	80-120
Chromium	ug/L (ppb)	20	96	80-120
Lead	ug/L (ppb)	10	92	80-120
Mercury	ug/L (ppb)	5	91	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003030-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	97	103	58-137	6
Vinyl chloride	mg/kg (ppm)	0.05	93	98	60-136	5
Chloroethane	mg/kg (ppm)	0.05	94	99	65-132	5
Trichlorofluoromethane	mg/kg (ppm)	0.05	91	98	66-133	7
1,1-Dichloroethene	mg/kg (ppm)	0.05	91	99	70-130	8
Methylene chloride	mg/kg (ppm)	0.05	94	105	52-150	11
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	96	104	70-130	8
1,1-Dichloroethane	mg/kg (ppm)	0.05	99	105	70-130	6
2,2-Dichloropropane	mg/kg (ppm)	0.05	95	95	70-130	0
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	102	107	70-130	5
Chloroform	mg/kg (ppm)	0.05	100	104	70-130	4
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	95	101	70-130	6
1,1-Dichloropropene	mg/kg (ppm)	0.05	90	93	70-130	3
Carbon tetrachloride	mg/kg (ppm)	0.05	94	99	70-130	5
Benzene	mg/kg (ppm)	0.05	96	97	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	91	90	70-130	1
1,2-Dichloropropane	mg/kg (ppm)	0.05	103	99	70-130	4
Bromodichloromethane	mg/kg (ppm)	0.05	103	99	70-130	4
Toluene	mg/kg (ppm)	0.05	90	89	70-130	1
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	98	96	70-130	2
1,3-Dichloropropane	mg/kg (ppm)	0.05	103	94	70-130	9
Tetrachloroethene	mg/kg (ppm)	0.05	87	85	70-130	2
Dibromochloromethane	mg/kg (ppm)	0.05	103	101	70-130	2
Chlorobenzene	mg/kg (ppm)	0.05	96	93	70-130	3
Ethylbenzene	mg/kg (ppm)	0.05	94	95	70-130	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	99	108	70-130	9
m,p-Xylene	mg/kg (ppm)	0.1	97	96	70-130	1
o-Xylene	mg/kg (ppm)	0.05	98	102	70-130	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	94	90	70-130	4
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	91	90	70-130	1
2-Chlorotoluene	mg/kg (ppm)	0.05	95	88	70-130	8
4-Chlorotoluene	mg/kg (ppm)	0.05	97	88	70-130	10
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	97	89	70-130	9
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	101	94	70-130	7
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	101	93	70-130	8
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	101	96	70-130	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	83	87	70-130	5
Hexachlorobutadiene	mg/kg (ppm)	0.05	96	86	70-130	11
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	104	96	65-131	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003061-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	94	100	58-137	6
Vinyl chloride	mg/kg (ppm)	0.05	90	94	60-136	4
Chloroethane	mg/kg (ppm)	0.05	93	99	65-132	6
Trichlorofluoromethane	mg/kg (ppm)	0.05	92	96	66-133	4
1,1-Dichloroethene	mg/kg (ppm)	0.05	95	96	70-130	1
Methylene chloride	mg/kg (ppm)	0.05	95	98	52-150	3
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	99	101	70-130	2
1,1-Dichloroethane	mg/kg (ppm)	0.05	100	103	70-130	3
2,2-Dichloropropane	mg/kg (ppm)	0.05	96	105	70-130	9
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	100	103	70-130	3
Chloroform	mg/kg (ppm)	0.05	100	102	70-130	2
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	98	100	70-130	2
1,1-Dichloropropene	mg/kg (ppm)	0.05	93	95	70-130	2
Carbon tetrachloride	mg/kg (ppm)	0.05	96	99	70-130	3
Benzene	mg/kg (ppm)	0.05	98	99	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	94	92	70-130	2
1,2-Dichloropropane	mg/kg (ppm)	0.05	101	101	70-130	0
Bromodichloromethane	mg/kg (ppm)	0.05	101	99	70-130	2
Toluene	mg/kg (ppm)	0.05	97	94	70-130	3
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	98	96	70-130	2
1,3-Dichloropropane	mg/kg (ppm)	0.05	99	95	70-130	4
Tetrachloroethene	mg/kg (ppm)	0.05	93	90	70-130	3
Dibromochloromethane	mg/kg (ppm)	0.05	102	102	70-130	0
Chlorobenzene	mg/kg (ppm)	0.05	98	96	70-130	2
Ethylbenzene	mg/kg (ppm)	0.05	100	95	70-130	5
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	108	106	70-130	2
m,p-Xylene	mg/kg (ppm)	0.1	102	98	70-130	4
o-Xylene	mg/kg (ppm)	0.05	104	101	70-130	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	91	92	70-130	1
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	90	89	70-130	1
2-Chlorotoluene	mg/kg (ppm)	0.05	97	95	70-130	2
4-Chlorotoluene	mg/kg (ppm)	0.05	99	95	70-130	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	99	96	70-130	3
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	101	98	70-130	3
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	102	97	70-130	5
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	101	98	70-130	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	83	87	70-130	5
Hexachlorobutadiene	mg/kg (ppm)	0.05	93	95	70-130	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	98	103	65-131	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

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

Laboratory Code: 002464-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chloromethane	ug/L (ppb)	50	<10	74	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	79	36-166
Chloroethane	ug/L (ppb)	50	<1	85	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	90	44-165
1,1-Dichloroethene	ug/L (ppb)	50	<1	89	60-136
Methylene chloride	ug/L (ppb)	50	<5	87	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	90	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	89	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	97	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	71-127
Chloroform	ug/L (ppb)	50	<1	92	65-132
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	89	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	101	56-152
Benzene	ug/L (ppb)	50	<0.35	87	76-125
Trichloroethene	ug/L (ppb)	50	<1	86	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	91	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Toluene	ug/L (ppb)	50	2.0	97	76-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	68-131
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	113	70-139
Chlorobenzene	ug/L (ppb)	50	<1	96	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	112	73-137
m,p-Xylene	ug/L (ppb)	100	2.2	99	69-135
o-Xylene	ug/L (ppb)	50	1.3	99	60-140
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	102	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	99	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	99	65-130
1,2,4-Trimethylbenzene	ug/L (ppb)	50	1.9	101	59-146
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	105	32-164
Hexachlorobutadiene	ug/L (ppb)	50	<1	95	60-143
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	98	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**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)	50	89	83	45-156	7
Vinyl chloride	ug/L (ppb)	50	92	84	50-154	9
Chloroethane	ug/L (ppb)	50	90	86	58-146	5
Trichlorofluoromethane	ug/L (ppb)	250	94	91	50-150	3
1,1-Dichloroethene	ug/L (ppb)	50	93	91	67-136	2
Methylene chloride	ug/L (ppb)	50	89	90	39-148	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	88	89	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	90	90	79-121	0
2,2-Dichloropropane	ug/L (ppb)	50	98	96	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	94	80-123	2
Chloroform	ug/L (ppb)	50	93	93	80-121	0
1,1,1-Trichloroethane	ug/L (ppb)	50	95	96	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	92	93	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	103	105	75-158	2
Benzene	ug/L (ppb)	50	90	91	69-134	1
Trichloroethene	ug/L (ppb)	50	89	90	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	96	98	77-123	2
Bromodichloromethane	ug/L (ppb)	50	105	106	81-133	1
Toluene	ug/L (ppb)	50	98	101	72-122	3
1,1,2-Trichloroethane	ug/L (ppb)	50	108	110	75-124	2
1,3-Dichloropropane	ug/L (ppb)	50	104	107	76-126	3
Tetrachloroethene	ug/L (ppb)	50	98	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	120	121	84-133	1
Chlorobenzene	ug/L (ppb)	50	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	102	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	84-127	1
m,p-Xylene	ug/L (ppb)	100	100	102	81-112	2
o-Xylene	ug/L (ppb)	50	100	99	81-121	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	112	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	103	107	67-124	4
2-Chlorotoluene	ug/L (ppb)	50	101	105	77-127	4
4-Chlorotoluene	ug/L (ppb)	50	102	106	78-128	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	106	79-122	1
1,3-Dichlorobenzene	ug/L (ppb)	50	100	101	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	50	98	100	83-107	2
1,2-Dichlorobenzene	ug/L (ppb)	50	98	98	84-112	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	116	112	57-141	4
Hexachlorobutadiene	ug/L (ppb)	50	101	96	53-141	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	96	65-136	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/11/20

Date Received: 02/28/20

Project: MMB, F&BI 002468

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

Laboratory Code: 002417-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	77	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	86	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	81	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	90	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	83	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	85	32-124
Fluoranthene	mg/kg (ppm)	0.17	0.023	96	16-160
Pyrene	mg/kg (ppm)	0.17	0.021	94	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	0.011	92	23-144
Chrysene	mg/kg (ppm)	0.17	0.014	85	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.014	83	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	76	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	0.0097	89	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	75	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	72	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	63	37-133

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)	0.17	85	84	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	93	90	54-121	3
Acenaphthene	mg/kg (ppm)	0.17	90	89	54-123	1
Fluorene	mg/kg (ppm)	0.17	101	95	56-127	6
Phenanthrene	mg/kg (ppm)	0.17	90	92	55-122	2
Anthracene	mg/kg (ppm)	0.17	87	87	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	92	90	54-129	2
Pyrene	mg/kg (ppm)	0.17	97	96	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	93	90	51-115	3
Chrysene	mg/kg (ppm)	0.17	96	93	55-129	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	82	80	56-123	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	83	85	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	79	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	73	84	49-148	14
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	72	82	50-141	13
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	70	79	52-131	12

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

002468  
**Sample Custody Record**

Samples Shipped to: \_\_\_\_\_



ME 02/28/20

1 of 3

BEY/VSS/AI.3/VW/  
 Hart Crowser, Inc.  
 3131 Elliott Avenue, Suite 600  
 Seattle, Washington 98121  
 Office: 206.324.9530 • Fax 206.328.5581

**HART CROWSER**

JOB <u>1940904</u>	LAB NUMBER _____	REQUESTED ANALYSIS NH <sub>4</sub> P <sub>4</sub> H-GX NH <sub>4</sub> P <sub>4</sub> H-DB HNO <sub>3</sub> P <sub>4</sub> BIEX-DB MCA-5 MOLEDS PHHS	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>MMB</u>				
HART CROWSER CONTACT <u>M. Goodman + B. Dozier</u>				
SAMPLED BY: <u>B. Dozier</u>				

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX													
01A	EHMWS DB-5		2/25/20	0905	soil	X	X	X	X	X								
02	HMWS DB-10			0915		X	X	X	X	X								
03	HMWS DB-15			0920		X	X	X	X	X								
04	HMWS DB-20			0925		X	X	X	X	X								
05	HMWS DB-25			0930		X	X	X	X	X								
06	HMWS DB-30			0935														
07	HMWS DB-35			0955														
08	HMW7 DB-5			1355		X	X	X	X	X								
09	HMW7 DB-10			1400		X	X	X	X	X								
10	HMW7 DB-15			1405		X	X	X	X	X								
11	HMW7 DB-20			1415		X	X	X	X	X								
12	HMW7 DB-25			1420		X	X	X	X	X								

Hold for analysis  
 Hold for analysis

Samples received at 3 °C

RELINQUISHED BY <u>[Signature]</u>	DATE <u>2/25/20</u>	RECEIVED BY <u>BISRA TADRESU</u>	DATE <u>2/28/20</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	60	TOTAL NUMBER OF CONTAINERS	
SIGNATURE <u>[Signature]</u>	TIME <u>1840</u>	SIGNATURE <u>[Signature]</u>	TIME <u>1840</u>				
PRINT NAME <u>HC</u>	COMPANY <u></u>	PRINT NAME <u></u>	COMPANY <u></u>				
RELINQUISHED BY	DATE	RECEIVED BY	DATE				
SIGNATURE	TIME	SIGNATURE	TIME	COOLER NO.:	STORAGE LOCATION:	TURNAROUND TIME:	
PRINT NAME		PRINT NAME		See Lab Work Order No. _____		<input type="checkbox"/> 24 HOURS	<input type="checkbox"/> 1 WEEK
COMPANY		COMPANY		for Other Contract Requirements		<input type="checkbox"/> 48 HOURS	<input checked="" type="checkbox"/> STANDARD
						<input type="checkbox"/> 72 HOURS	OTHER _____





FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

March 12, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman:

Included are the results from the testing of material submitted on March 3, 2020 from the MMB, F&BI 003022 project. There are 111 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: Hart Crowser A/P (HCR), Becca Dozier  
HCR0312R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 3, 2020 by Friedman & Bruya, Inc. from the Hart Crowser MMB, F&BI 003022 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
003022 -01	HMW-9S-5
003022 -02	HMW-9S-14
003022 -03	HMW-9S-17
003022 -04	HMW-9S-20
003022 -05	HMW-9S-25
003022 -06	HMW-6D-5
003022 -07	HMW-6D-10
003022 -08	HMW-6D-15
003022 -09	HMW-6D-25
003022 -10	HMW-6D-30
003022 -11	HMW-6D-30-Dup
003022 -12	HMW-6IA-5
003022 -13	HMW-6IA-10
003022 -14	HMW-6IA-15
003022 -15	HMW-6IA-20
003022 -16	HMW-6IA-30
003022 -17	HMW-8IB-5
003022 -18	HMW-8IB-10
003022 -19	HMW-8IB-15
003022 -20	HMW-8IB-20
003022 -21	HMW-8IB-25
003022 -22	HMW-8IB-25a
003022 -23	MBB-5-5
003022 -24	MBB-5-10
003022 -25	MBB-5-15
003022 -26	MBB-5-20
003022 -27	MBB-5-25
003022 -28	DMW-2S-05
003022 -29	DMW-2S-10
003022 -30	DMW-2S-15
003022 -31	DMW-2S-20
003022 -32	DMW-2S-25
003022 -33	Tripblank0302

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

Methylene chloride was detected in the 8260D analysis of samples HMW-6D-25, HMW-8IB-5, HMW-8IB-15, HMW-8IB-25, MBB-5-25, and DMW-2S-05. The data were flagged as due to laboratory contamination.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/04/20  
Date Analyzed: 03/05/20 and 03/06/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW-9S-5 003022-01	<5	95
HMW-9S-14 003022-02	<5	95
HMW-9S-17 003022-03	<5	97
HMW-9S-20 003022-04	<5	97
HMW-9S-25 003022-05	<5	98
HMW-6D-5 003022-06	<5	96
HMW-6D-10 003022-07	<5	96
HMW-6D-15 003022-08	<5	95
HMW-6D-25 003022-09	<5	98
HMW-6D-30 003022-10	<5	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/04/20  
Date Analyzed: 03/05/20 and 03/06/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW-6D-30-Dup 003022-11	<5	97
HMW-6IA-5 003022-12	<5	98
HMW-6IA-10 003022-13	<5	100
HMW-6IA-15 003022-14	<5	97
HMW-6IA-20 003022-15	<5	98
HMW-6IA-30 003022-16	<5	98
HMW-8IB-5 003022-17	<5	100
HMW-8IB-10 003022-18	<5	100
HMW-8IB-15 003022-19	<5	101
HMW-8IB-20 003022-20	<5	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/04/20  
Date Analyzed: 03/05/20 and 03/06/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW-8IB-25 003022-21	<5	93
HMW-8IB-25a 003022-22	<5	92
MBB-5-5 003022-23	<5	94
MBB-5-10 003022-24	<5	93
MBB-5-15 003022-25	<5	93
MBB-5-20 003022-26	<5	94
MBB-5-25 003022-27	<5	94
DMW-2S-05 003022-28	<5	94
DMW-2S-10 003022-29 1/5	83	103
DMW-2S-15 003022-30	<5	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/04/20  
Date Analyzed: 03/05/20 and 03/06/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
DMW-2S-20 003022-31	<5	94
DMW-2S-25 003022-32	<5	96
Method Blank 00-398 MB	<5	97
Method Blank 00-399 MB	<5	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
 Date Received: 03/03/20  
 Project: MMB, F&BI 003022  
 Date Extracted: 03/03/20  
 Date Analyzed: 03/03/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL AND MOTOR OIL  
 USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW-9S-5 003022-01	<50	<250	89
HMW-9S-14 003022-02	<50	<250	88
HMW-9S-17 003022-03	<50	<250	88
HMW-9S-20 003022-04	<50	<250	87
HMW-9S-25 003022-05	<50	<250	87
HMW-6D-5 003022-06	<50	500	87
HMW-6D-10 003022-07	<50	440	88
HMW-6D-15 003022-08	<50	470	89
HMW-6D-25 003022-09	<50	490	90
HMW-6D-30 003022-10	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
 Date Received: 03/03/20  
 Project: MMB, F&BI 003022  
 Date Extracted: 03/03/20  
 Date Analyzed: 03/03/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW-6D-30-Dup 003022-11	<50	<250	88
HMW-6IA-5 003022-12	<50	<250	90
HMW-6IA-10 003022-13	67 x	670	89
HMW-6IA-15 003022-14	61 x	600	88
HMW-6IA-20 003022-15	<50	450	88
HMW-6IA-30 003022-16	<50	<250	89
HMW-8IB-5 003022-17	68 x	520	89
HMW-8IB-10 003022-18	<50	480	88
HMW-8IB-15 003022-19	58 x	590	89
HMW-8IB-20 003022-20	<50	<250	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/03/20  
Date Analyzed: 03/03/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW-8IB-25 003022-21	<50	<250	89
HMW-8IB-25a 003022-22	<50	<250	88
MBB-5-5 003022-23	<50	<250	89
MBB-5-10 003022-24	<50	<250	89
MBB-5-15 003022-25	<50	<250	88
MBB-5-20 003022-26	<50	<250	88
MBB-5-25 003022-27	<50	<250	89
DMW-2S-05 003022-28	<50	<250	88
DMW-2S-10 003022-29	<50	<250	89
DMW-2S-15 003022-30	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022  
Date Extracted: 03/03/20  
Date Analyzed: 03/03/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
DMW-2S-20 003022-31	<50	<250	89
DMW-2S-25 003022-32	<50	<250	89
Method Blank 00-527 MB	<50	<250	87
Method Blank 00-528 MB	<50	<250	89
Method Blank 00-521 MB	<50	<250	82

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9S-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-01
Date Analyzed:	03/06/20	Data File:	003022-01.204
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.64
Cadmium	<1
Chromium	15.8
Lead	5.91
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9S-14	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-02
Date Analyzed:	03/06/20	Data File:	003022-02.205
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	14.5
Cadmium	<1
Chromium	19.2
Lead	14.5
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9S-17	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-03
Date Analyzed:	03/06/20	Data File:	003022-03.206
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	17.7
Cadmium	<1
Chromium	14.3
Lead	17.3
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9S-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-04
Date Analyzed:	03/06/20	Data File:	003022-04.207
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.30
Cadmium	<1
Chromium	11.3
Lead	1.17
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9S-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-05
Date Analyzed:	03/06/20	Data File:	003022-05.208
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.36
Cadmium	<1
Chromium	13.9
Lead	1.52
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-06
Date Analyzed:	03/06/20	Data File:	003022-06.211
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	16.4
Cadmium	<1
Chromium	17.8
Lead	21.8
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-07
Date Analyzed:	03/06/20	Data File:	003022-07.212
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	21.8
Cadmium	<1
Chromium	20.2
Lead	23.6
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-08
Date Analyzed:	03/06/20	Data File:	003022-08.213
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	24.4
Cadmium	<1
Chromium	21.3
Lead	21.3
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-09
Date Analyzed:	03/06/20	Data File:	003022-09.214
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	18.0
Cadmium	<1
Chromium	26.4
Lead	16.0
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-10
Date Analyzed:	03/06/20	Data File:	003022-10.215
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.61
Cadmium	<1
Chromium	14.4
Lead	1.69
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6D-30-Dup	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-11
Date Analyzed:	03/06/20	Data File:	003022-11.216
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.42
Cadmium	<1
Chromium	10.8
Lead	1.44
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6IA-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-12
Date Analyzed:	03/06/20	Data File:	003022-12.217
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	15.6
Cadmium	<1
Chromium	18.1
Lead	20.1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-6IA-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-13
Date Analyzed:	03/06/20	Data File:	003022-13.218
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	13.6
Cadmium	<1
Chromium	19.2
Lead	16.5
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-61A-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-14
Date Analyzed:	03/06/20	Data File:	003022-14.219
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	18.6
Cadmium	<1
Chromium	16.0
Lead	20.5
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-61A-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-15
Date Analyzed:	03/06/20	Data File:	003022-15.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	18.3
Cadmium	<1
Chromium	30.2
Lead	13.4
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-61A-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-16
Date Analyzed:	03/06/20	Data File:	003022-16.048
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.10
Cadmium	<1
Chromium	19.9
Lead	4.88
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-17
Date Analyzed:	03/06/20	Data File:	003022-17.051
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	21.4
Cadmium	<1
Chromium	20.8
Lead	24.8
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-18
Date Analyzed:	03/06/20	Data File:	003022-18.052
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	19.5
Cadmium	<1
Chromium	18.3
Lead	19.1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-19
Date Analyzed:	03/06/20	Data File:	003022-19.053
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	17.1
Cadmium	<1
Chromium	19.3
Lead	19.4
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-20
Date Analyzed:	03/06/20	Data File:	003022-20.054
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.86
Cadmium	<1
Chromium	14.9
Lead	5.00
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-21
Date Analyzed:	03/06/20	Data File:	003022-21.055
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.12
Cadmium	<1
Chromium	15.1
Lead	1.38
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-8IB-25a	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-22
Date Analyzed:	03/06/20	Data File:	003022-22.056
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.06
Cadmium	<1
Chromium	17.9
Lead	1.49
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-23
Date Analyzed:	03/06/20	Data File:	003022-23.057
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	23.2
Cadmium	<1
Chromium	20.1
Lead	17.6
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-24
Date Analyzed:	03/06/20	Data File:	003022-24.058
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	6.56
Cadmium	<1
Chromium	17.7
Lead	531 ve
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-24 x5
Date Analyzed:	03/09/20	Data File:	003022-24 x5.047
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
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Lead	591
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-25
Date Analyzed:	03/06/20	Data File:	003022-25.059
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.81
Cadmium	<1
Chromium	14.8
Lead	1.57
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-26
Date Analyzed:	03/06/20	Data File:	003022-26.060
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.34
Cadmium	<1
Chromium	12.6
Lead	1.24
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-5-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-27
Date Analyzed:	03/06/20	Data File:	003022-27.064
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.51
Cadmium	<1
Chromium	15.2
Lead	1.29
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S-05	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-28
Date Analyzed:	03/06/20	Data File:	003022-28.065
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.41
Cadmium	<1
Chromium	20.2
Lead	2.19
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-29
Date Analyzed:	03/06/20	Data File:	003022-29.066
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.22
Cadmium	<1
Chromium	15.0
Lead	1.27
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-30
Date Analyzed:	03/06/20	Data File:	003022-30.067
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.44
Cadmium	<1
Chromium	17.8
Lead	1.91
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-31
Date Analyzed:	03/06/20	Data File:	003022-31.068
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.46
Cadmium	<1
Chromium	17.3
Lead	1.29
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	003022-32
Date Analyzed:	03/06/20	Data File:	003022-32.069
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.20
Cadmium	<1
Chromium	14.5
Lead	1.19
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	I0-130 mb2
Date Analyzed:	03/05/20	Data File:	I0-130 mb2.167
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 003022
Date Extracted:	03/05/20	Lab ID:	I0-131 mb2
Date Analyzed:	03/06/20	Data File:	I0-131 mb2.042
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9S-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-01
Date Analyzed:	03/06/20	Data File:	030613.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9S-14	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-02
Date Analyzed:	03/06/20	Data File:	030628.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9S-17	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-03
Date Analyzed:	03/06/20	Data File:	030616.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9S-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-04
Date Analyzed:	03/06/20	Data File:	030617.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9S-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-05
Date Analyzed:	03/06/20	Data File:	030618.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-06
Date Analyzed:	03/06/20	Data File:	030619.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	110	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-07
Date Analyzed:	03/06/20	Data File:	030620.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-08
Date Analyzed:	03/06/20	Data File:	030621.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-09
Date Analyzed:	03/06/20	Data File:	030639.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.028 lc j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-10
Date Analyzed:	03/06/20	Data File:	030624.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6D-30-Dup	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-11
Date Analyzed:	03/06/20	Data File:	030625.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6IA-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-12
Date Analyzed:	03/06/20	Data File:	030626.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	112	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6IA-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-13
Date Analyzed:	03/06/20	Data File:	030627.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-6IA-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-14
Date Analyzed:	03/06/20	Data File:	030615.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-61A-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-15
Date Analyzed:	03/06/20	Data File:	030637.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-61A-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-16
Date Analyzed:	03/06/20	Data File:	030638.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	111	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-17
Date Analyzed:	03/09/20	Data File:	030925.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.024 lc j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-18
Date Analyzed:	03/06/20	Data File:	030640.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-19
Date Analyzed:	03/06/20	Data File:	030641.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	117	50	150
4-Bromofluorobenzene	79	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.037 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-20
Date Analyzed:	03/06/20	Data File:	030642.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	85	50	150
Toluene-d8	89	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-21
Date Analyzed:	03/06/20	Data File:	030643.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	114	50	150
4-Bromofluorobenzene	117	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.024 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-8IB-25a	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-22
Date Analyzed:	03/06/20	Data File:	030644.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	88	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-5-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-23
Date Analyzed:	03/06/20	Data File:	030645.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-5-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-24
Date Analyzed:	03/06/20	Data File:	030646.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-5-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-25
Date Analyzed:	03/06/20	Data File:	030647.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	80	50	150
Toluene-d8	116	50	150
4-Bromofluorobenzene	90	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-5-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-26
Date Analyzed:	03/06/20	Data File:	030648.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	75	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-5-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-27
Date Analyzed:	03/09/20	Data File:	030926.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.021 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-2S-05	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-28
Date Analyzed:	03/09/20	Data File:	030927.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.029 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-2S-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-29
Date Analyzed:	03/06/20	Data File:	030622.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	50	150
Toluene-d8	487 ip	50	150
4-Bromofluorobenzene	358 ip	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.31 ve
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-2S-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-30
Date Analyzed:	03/09/20	Data File:	030928.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-2S-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-31
Date Analyzed:	03/09/20	Data File:	030911.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	92	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-2S-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	003022-32
Date Analyzed:	03/09/20	Data File:	030912.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	00-562 mb
Date Analyzed:	03/06/20	Data File:	030610.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 003022
Date Extracted:	03/06/20	Lab ID:	00-580 mb
Date Analyzed:	03/06/20	Data File:	030609.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Tripblank0302	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/04/20	Lab ID:	003022-33
Date Analyzed:	03/06/20	Data File:	030619.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	00-496 mb
Date Analyzed:	03/04/20	Data File:	030409.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6D-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-06 1/25
Date Analyzed:	03/05/20	Data File:	030431.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92 d	31	163
Benzo(a)anthracene-d12	101 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.099
Anthracene	<0.05
Fluoranthene	0.21
Pyrene	0.24
Benz(a)anthracene	0.085
Chrysene	0.13
Benzo(a)pyrene	0.076
Benzo(b)fluoranthene	0.11
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6D-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-07 1/25
Date Analyzed:	03/05/20	Data File:	030428.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93 d	31	163
Benzo(a)anthracene-d12	96 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.30
Anthracene	<0.05
Fluoranthene	0.24
Pyrene	0.27
Benz(a)anthracene	0.083
Chrysene	0.11
Benzo(a)pyrene	0.064
Benzo(b)fluoranthene	0.088
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6D-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-08 1/25
Date Analyzed:	03/05/20	Data File:	030429.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92 d	31	163
Benzo(a)anthracene-d12	94 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.14
Anthracene	<0.05
Fluoranthene	0.18
Pyrene	0.21
Benz(a)anthracene	0.066
Chrysene	0.092
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.066
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6D-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-09 1/25
Date Analyzed:	03/05/20	Data File:	030430.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97 d	31	163
Benzo(a)anthracene-d12	102 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.23
Anthracene	0.077
Fluoranthene	0.29
Pyrene	0.29
Benz(a)anthracene	0.071
Chrysene	0.10
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.080
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6D-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-10 1/5
Date Analyzed:	03/04/20	Data File:	030423.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	163
Benzo(a)anthracene-d12	92	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6IA-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-12 1/25
Date Analyzed:	03/04/20	Data File:	030427.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88 d	31	163
Benzo(a)anthracene-d12	93 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.11
Anthracene	<0.05
Fluoranthene	0.14
Pyrene	0.15
Benz(a)anthracene	0.051
Chrysene	0.072
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.058
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6IA-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-13 1/25
Date Analyzed:	03/04/20	Data File:	030426.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84 d	31	163
Benzo(a)anthracene-d12	94 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.23
Anthracene	<0.05
Fluoranthene	0.20
Pyrene	0.22
Benz(a)anthracene	0.082
Chrysene	0.10
Benzo(a)pyrene	0.060
Benzo(b)fluoranthene	0.086
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6IA-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-14 1/25
Date Analyzed:	03/04/20	Data File:	030425.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	95 d	31	163
Benzo(a)anthracene-d12	103 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.11
Anthracene	<0.05
Fluoranthene	0.27
Pyrene	0.28
Benz(a)anthracene	0.089
Chrysene	0.12
Benzo(a)pyrene	0.065
Benzo(b)fluoranthene	0.080
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6IA-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-15 1/25
Date Analyzed:	03/04/20	Data File:	030424.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83 d	31	163
Benzo(a)anthracene-d12	83 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.11
Anthracene	<0.05
Fluoranthene	0.14
Pyrene	0.14
Benz(a)anthracene	<0.05
Chrysene	0.065
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-6IA-30	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-16 1/5
Date Analyzed:	03/04/20	Data File:	030407.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	163
Benzo(a)anthracene-d12	91	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-8IB-5	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-17 1/25
Date Analyzed:	03/05/20	Data File:	030435.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84 d	31	163
Benzo(a)anthracene-d12	92 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.32
Anthracene	<0.05
Fluoranthene	0.25
Pyrene	0.27
Benz(a)anthracene	0.086
Chrysene	0.12
Benzo(a)pyrene	0.066
Benzo(b)fluoranthene	0.094
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-8IB-10	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-18 1/25
Date Analyzed:	03/05/20	Data File:	030432.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	0.050
Fluorene	<0.05
Phenanthrene	0.40
Anthracene	0.061
Fluoranthene	0.29
Pyrene	0.37
Benz(a)anthracene	0.11
Chrysene	0.14
Benzo(a)pyrene	0.085
Benzo(b)fluoranthene	0.11
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-8IB-15	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-19 1/25
Date Analyzed:	03/05/20	Data File:	030433.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	98 d	31	163
Benzo(a)anthracene-d12	99 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	0.058
Fluorene	<0.05
Phenanthrene	0.70
Anthracene	0.090
Fluoranthene	0.34
Pyrene	0.36
Benz(a)anthracene	0.093
Chrysene	0.12
Benzo(a)pyrene	0.063
Benzo(b)fluoranthene	0.090
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-8IB-20	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-20 1/25
Date Analyzed:	03/05/20	Data File:	030434.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90 d	31	163
Benzo(a)anthracene-d12	98 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	0.055
Anthracene	<0.05
Fluoranthene	0.056
Pyrene	0.074
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	HMW-8IB-25	Client:	Hart Crowser
Date Received:	03/03/20	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	003022-21 1/5
Date Analyzed:	03/04/20	Data File:	030408.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 003022
Date Extracted:	03/03/20	Lab ID:	00-522 mb 1/5
Date Analyzed:	03/03/20	Data File:	030308.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	94	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

Date Received: 03/03/20

Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 003022-01 (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)	20	100	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
Date Received: 03/03/20  
Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 003022-21 (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)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

Date Received: 03/03/20

Project: MMB, F&BI 003022

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

Laboratory Code: 003022-01 (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	<50	90	90	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
 Date Received: 03/03/20  
 Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 003022-21 (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	<50	90	94	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	92	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
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 Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 003014-01 (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	<50	96	102	64-133	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	58-147

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
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 Project: MMB, F&BI 003022

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

Laboratory Code: 002468-23 (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	1.18	85	86	75-125	1
Cadmium	mg/kg (ppm)	10	<1	96	96	75-125	0
Chromium	mg/kg (ppm)	50	13.4	87	92	75-125	6
Lead	mg/kg (ppm)	50	1.29	98	99	75-125	1
Mercury	mg/kg (ppm)	5	<1	86	91	75-125	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	87	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	94	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	99	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20  
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 Project: MMB, F&BI 003022

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

Laboratory Code: 003022-15 (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	16.6	78	83	75-125	6
Cadmium	mg/kg (ppm)	10	<1	95	95	75-125	0
Chromium	mg/kg (ppm)	50	27.5	94	91	75-125	3
Lead	mg/kg (ppm)	50	12.2	95	93	75-125	2
Mercury	mg/kg (ppm)	5	<1	96	97	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	97	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	101	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003022-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

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Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	111	108	58-137	3
Vinyl chloride	mg/kg (ppm)	0.05	104	102	60-136	2
Chloroethane	mg/kg (ppm)	0.05	106	103	65-132	3
Trichlorofluoromethane	mg/kg (ppm)	0.05	103	100	66-133	3
1,1-Dichloroethene	mg/kg (ppm)	0.05	102	99	70-130	3
Methylene chloride	mg/kg (ppm)	0.05	98	96	52-150	2
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	103	101	70-130	2
1,1-Dichloroethane	mg/kg (ppm)	0.05	102	102	70-130	0
2,2-Dichloropropane	mg/kg (ppm)	0.05	107	105	70-130	2
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	102	102	70-130	0
Chloroform	mg/kg (ppm)	0.05	100	101	70-130	1
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	103	101	70-130	2
1,1-Dichloropropene	mg/kg (ppm)	0.05	92	95	70-130	3
Carbon tetrachloride	mg/kg (ppm)	0.05	102	99	70-130	3
Benzene	mg/kg (ppm)	0.05	100	99	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	94	95	70-130	1
1,2-Dichloropropane	mg/kg (ppm)	0.05	105	99	70-130	6
Bromodichloromethane	mg/kg (ppm)	0.05	103	101	70-130	2
Toluene	mg/kg (ppm)	0.05	97	96	70-130	1
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	101	95	70-130	6
1,3-Dichloropropane	mg/kg (ppm)	0.05	102	96	70-130	6
Tetrachloroethene	mg/kg (ppm)	0.05	95	93	70-130	2
Dibromochloromethane	mg/kg (ppm)	0.05	106	101	70-130	5
Chlorobenzene	mg/kg (ppm)	0.05	100	98	70-130	2
Ethylbenzene	mg/kg (ppm)	0.05	102	100	70-130	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	104	106	70-130	2
m,p-Xylene	mg/kg (ppm)	0.1	104	101	70-130	3
o-Xylene	mg/kg (ppm)	0.05	106	104	70-130	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	97	90	70-130	7
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	95	87	70-130	9
2-Chlorotoluene	mg/kg (ppm)	0.05	102	99	70-130	3
4-Chlorotoluene	mg/kg (ppm)	0.05	103	100	70-130	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	103	101	70-130	2
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	105	100	70-130	5
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	102	100	70-130	2
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	103	100	70-130	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	90	81	70-130	11
Hexachlorobutadiene	mg/kg (ppm)	0.05	103	98	70-130	5
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	105	101	65-131	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

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Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003022-11 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

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Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	110	115	58-137	4
Vinyl chloride	mg/kg (ppm)	0.05	105	110	60-136	5
Chloroethane	mg/kg (ppm)	0.05	110	113	65-132	3
Trichlorofluoromethane	mg/kg (ppm)	0.05	113	115	66-133	2
1,1-Dichloroethene	mg/kg (ppm)	0.05	109	109	70-130	0
Methylene chloride	mg/kg (ppm)	0.05	110	108	52-150	2
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	110	112	70-130	2
1,1-Dichloroethane	mg/kg (ppm)	0.05	113	109	70-130	4
2,2-Dichloropropane	mg/kg (ppm)	0.05	113	121	70-130	7
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	113	110	70-130	3
Chloroform	mg/kg (ppm)	0.05	111	109	70-130	2
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	113	114	70-130	1
1,1-Dichloropropene	mg/kg (ppm)	0.05	97	94	70-130	3
Carbon tetrachloride	mg/kg (ppm)	0.05	112	112	70-130	0
Benzene	mg/kg (ppm)	0.05	101	99	70-130	2
Trichloroethene	mg/kg (ppm)	0.05	93	88	70-130	6
1,2-Dichloropropane	mg/kg (ppm)	0.05	103	95	70-130	8
Bromodichloromethane	mg/kg (ppm)	0.05	102	97	70-130	5
Toluene	mg/kg (ppm)	0.05	95	96	70-130	1
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	98	98	70-130	0
1,3-Dichloropropane	mg/kg (ppm)	0.05	99	94	70-130	5
Tetrachloroethene	mg/kg (ppm)	0.05	89	88	70-130	1
Dibromochloromethane	mg/kg (ppm)	0.05	103	102	70-130	1
Chlorobenzene	mg/kg (ppm)	0.05	98	90	70-130	9
Ethylbenzene	mg/kg (ppm)	0.05	102	94	70-130	8
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	108	120	70-130	11
m,p-Xylene	mg/kg (ppm)	0.1	102	94	70-130	8
o-Xylene	mg/kg (ppm)	0.05	106	105	70-130	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	92	92	70-130	0
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	92	90	70-130	2
2-Chlorotoluene	mg/kg (ppm)	0.05	94	81	70-130	15
4-Chlorotoluene	mg/kg (ppm)	0.05	96	79	70-130	19
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	96	83	70-130	15
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	99	85	70-130	15
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	99	83	70-130	18
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	102	92	70-130	10
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	89	102	70-130	14
Hexachlorobutadiene	mg/kg (ppm)	0.05	94	75	70-130	22 vo
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	99	100	65-131	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

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Project: MMB, F&BI 003022

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

Laboratory Code: 003021-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chloromethane	ug/L (ppb)	50	<10	94	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	100	36-166
Chloroethane	ug/L (ppb)	50	<1	104	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	113	44-165
1,1-Dichloroethene	ug/L (ppb)	50	<1	114	60-136
Methylene chloride	ug/L (ppb)	50	<5	131	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	104	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	116	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	112	71-127
Chloroform	ug/L (ppb)	50	<1	107	65-132
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	115	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	102	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	122	56-152
Benzene	ug/L (ppb)	50	<0.35	100	76-125
Trichloroethene	ug/L (ppb)	50	<1	98	66-135
1,2-Dichloropropane	ug/L (ppb)	50	7.2	105	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	113	61-150
Toluene	ug/L (ppb)	50	<1	102	76-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	106	68-131
1,3-Dichloropropane	ug/L (ppb)	50	<1	100	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	101	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	116	70-139
Chlorobenzene	ug/L (ppb)	50	<1	101	77-122
Ethylbenzene	ug/L (ppb)	50	<1	104	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	124	73-137
m,p-Xylene	ug/L (ppb)	100	<2	105	69-135
o-Xylene	ug/L (ppb)	50	<1	108	60-140
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	109	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	1.1	101	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	108	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	104	65-130
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	113	59-146
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	101	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	99	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	104	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	120	32-164
Hexachlorobutadiene	ug/L (ppb)	50	<1	116	60-143
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	115	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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**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 LCS D	Acceptance Criteria	RPD (Limit 20)
Chloromethane	ug/L (ppb)	50	90	88	45-156	2
Vinyl chloride	ug/L (ppb)	50	94	94	50-154	0
Chloroethane	ug/L (ppb)	50	95	94	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	106	104	50-150	2
1,1-Dichloroethene	ug/L (ppb)	50	108	97	67-136	11
Methylene chloride	ug/L (ppb)	50	103	101	39-148	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	98	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	100	99	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	103	102	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	105	102	80-123	3
Chloroform	ug/L (ppb)	50	103	102	80-121	1
1,1,1-Trichloroethane	ug/L (ppb)	50	105	104	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	101	101	77-129	0
Carbon tetrachloride	ug/L (ppb)	50	113	111	75-158	2
Benzene	ug/L (ppb)	50	99	99	69-134	0
Trichloroethene	ug/L (ppb)	50	97	99	79-113	2
1,2-Dichloropropane	ug/L (ppb)	50	105	106	77-123	1
Bromodichloromethane	ug/L (ppb)	50	114	115	81-133	1
Toluene	ug/L (ppb)	50	101	101	72-122	0
1,1,2-Trichloroethane	ug/L (ppb)	50	112	113	75-124	1
1,3-Dichloropropane	ug/L (ppb)	50	106	107	76-126	1
Tetrachloroethene	ug/L (ppb)	50	100	100	76-121	0
Dibromochloromethane	ug/L (ppb)	50	119	120	84-133	1
Chlorobenzene	ug/L (ppb)	50	102	102	83-114	0
Ethylbenzene	ug/L (ppb)	50	102	103	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	118	116	84-127	2
m,p-Xylene	ug/L (ppb)	100	103	103	81-112	0
o-Xylene	ug/L (ppb)	50	103	102	81-121	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	110	109	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	50	104	104	67-124	0
2-Chlorotoluene	ug/L (ppb)	50	102	101	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	103	102	78-128	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	105	79-122	0
1,3-Dichlorobenzene	ug/L (ppb)	50	101	101	83-113	0
1,4-Dichlorobenzene	ug/L (ppb)	50	100	100	83-107	0
1,2-Dichlorobenzene	ug/L (ppb)	50	101	100	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	112	109	57-141	3
Hexachlorobutadiene	ug/L (ppb)	50	103	103	53-141	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	105	104	65-136	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/12/20

Date Received: 03/03/20

Project: MMB, F&BI 003022

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

Laboratory Code: 003014-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	77	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	83	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	79	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	81	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	79	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	78	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	83	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	78	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	80	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	80	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	70	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	70	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	74	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	65	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	65	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	60	37-133

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)	0.17	84	87	58-121	4
Acenaphthylene	mg/kg (ppm)	0.17	92	94	54-121	2
Acenaphthene	mg/kg (ppm)	0.17	88	89	54-123	1
Fluorene	mg/kg (ppm)	0.17	92	94	56-127	2
Phenanthrene	mg/kg (ppm)	0.17	89	91	55-122	2
Anthracene	mg/kg (ppm)	0.17	88	90	50-120	2
Fluoranthene	mg/kg (ppm)	0.17	96	97	54-129	1
Pyrene	mg/kg (ppm)	0.17	88	91	53-127	3
Benz(a)anthracene	mg/kg (ppm)	0.17	92	95	51-115	3
Chrysene	mg/kg (ppm)	0.17	94	96	55-129	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	78	82	56-123	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	79	84	54-131	6
Benzo(a)pyrene	mg/kg (ppm)	0.17	81	85	51-118	5
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	80	81	49-148	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	78	78	50-141	0
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	72	74	52-131	3

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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 Custody Record

003022



3074 VSS/BDU/UVJ  
 Hart Crowser, Inc.  
 3131 Elliott Avenue, Suite 600  
 Seattle, Washington 98121  
 Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: F&B

JOB 1940904 LAB NUMBER \_\_\_\_\_  
 PROJECT NAME MMB  
 HART CROWSER CONTACT M. Goodman + B. Dozier  
 SAMPLED BY: B. Dozier

REQUESTED ANALYSIS  
 NWTPH-DX  
 NWTPH-6X  
 HNO<sub>3</sub> F BTEX  
 METALS  
 PAHs

NO. OF CONTAINERS

OBSERVATIONS/COMMENTS/  
 COMPOSITING INSTRUCTIONS

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	NWTPH-DX	NWTPH-6X	HNO <sub>3</sub> F BTEX	METALS	PAHs	NO. OF CONTAINERS
17A-E	HMW8DB-5		3/2/20	1015	soil	X	X	X	X	X	5
18	HMW8DB-10			1020		X	X	X	X	X	
19	HMW8DB-15			1030		X	X	X	X	X	
20	HMW8DB-20			1035		X	X	X	X	X	
21	HMW8DB-25			1040		X	X	X	X	X	
22	HMW8DB-25a			1041		X	X	X	X	X	
23	MBBS-5			1520		X	X	X	X	X	
24	MBBS-10			1525		X	X	X	X	X	
25	MBBS-15			1530		X	X	X	X	X	
26	MBBS-20			1540		X	X	X	X	X	
27	MBBS-25			1550		X	X	X	X	X	

Samples received at 4 °C

RELINQUISHED BY <u>M. Goodman</u>	DATE <u>3/3/20</u>	RECEIVED BY <u>Vinny</u>	DATE <u>3/3/20</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements	TOTAL NUMBER OF CONTAINERS <u>57</u>
SIGNATURE <u>M. Goodman</u>	TIME <u>0915</u>	SIGNATURE <u>Vinny</u>	TIME <u>10:10 AM</u>		
PRINT NAME <u>Hart Crowser</u>	COMPANY <u>FBI</u>	PRINT NAME <u>VINNY</u>	COMPANY <u>FBI</u>		
RELINQUISHED BY	DATE	RECEIVED BY	DATE		
SIGNATURE	TIME	SIGNATURE	TIME	TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____	
PRINT NAME	COMPANY	PRINT NAME	COMPANY		
RELINQUISHED BY	DATE	RECEIVED BY	DATE		

# Sample Custody Record 003022

Samples Shipped to: F&B



ME 03/03/20 4 of 4 VSS/244/VW1

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940904</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS							
PROJECT NAME <u>MMB</u>						NUTPHG*	NUTPH D*	HVOCs + BTEX-Bio	MTCA 5 Metals															
HART CROWSER CONTACT <u>M. Goodman</u>																								
SAMPLED BY: <u>J. Blanchette</u>																								
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX																			
28 A-E	DMW-2S-05		3/2/20	0910	Soil	X	X	X	X															5
29	DMW-2S-10			0920		X	X	X	X															5
30	DMW-2S-15			0940		X	X	X	X															5
31	DMW-2S-20			0950		X	X	X	X															5
32	DMW-2S-25			1010		X	X	X	X															5
33 AB	Tripblank 0302							X																2
Samples received at <u>4°C</u>																								
RELINQUISHED BY		DATE	RECEIVED BY		DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:										TOTAL NUMBER OF CONTAINERS								
SIGNATURE <u>M. Goodman</u>		3/3/20	SIGNATURE <u>[Signature]</u>		3/3/20											27								
PRINT NAME <u>M. Goodman</u>		TIME <u>0915</u>	PRINT NAME <u>VIN 6</u>		TIME <u>10:10</u>	COOLER NO.: _____ STORAGE LOCATION: _____										SAMPLE RECEIPT INFORMATION								
COMPANY <u>Hart Crowser</u>			COMPANY <u>FBI</u>													CUSTODY SEALS:								
RELINQUISHED BY		DATE	RECEIVED BY		DATE	See Lab Work Order No. _____ for Other Contract Requirements										GOOD CONDITION								
SIGNATURE		TIME	SIGNATURE		TIME											<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT								
PRINT NAME			PRINT NAME			TURNAROUND TIME:										<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____								
COMPANY			COMPANY																					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

March 13, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the results from the testing of material submitted on February 28, 2020 from the MMB, F&BI 002445 project. There are 147 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: Becca Dozier  
HCR0313R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 28, 2020 by Friedman & Bruya, Inc. from the Hart Crowser MMB, F&BI 002445 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
002445 -01	MBB-4-5
002445 -02	MBB-4-10
002445 -03	MBB-4-10a
002445 -04	MBB-4-15
002445 -05	MBB-4-20
002445 -06	MBB-4-25
002445 -07	MBB-4-30
002445 -08	MBB-3-5
002445 -09	MBB-3-10
002445 -10	MBB-3-15
002445 -11	MBB-3-12
002445 -12	MBB-3-20
002445 -13	MBB-3-25
002445 -14	MBB-3-30
002445 -15	MBB-3-35
002445 -16	MBB-3-40
002445 -17	MBB-2-5
002445 -18	MBB-2-10
002445 -19	MBB-2-15
002445 -20	MBB-2-20
002445 -21	MBB-2-20a
002445 -22	MBB-2-25
002445 -23	MBB-2-30
002445 -24	MBB-1-5
002445 -25	MBB-1-10
002445 -26	MBB-1-15
002445 -27	MBB-1-20
002445 -28	MBB-1-25
002445 -29	MBB-1-30
002445 -30	HMW-9D-5
002445 -31	HMW-9D-10
002445 -32	HMW-9D-15
002445 -33	HMW-9D-20
002445 -34	HMW-9D-25
002445 -35	MBB-8-GW
002445 -36	MBB-10-GW

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

<u>Laboratory ID</u>	<u>Hart Crowser</u>
002445 -37	DMW-3IA-5
002445 -38	DMW-3IA-10
002445 -39	DMW-3IA-15
002445 -40	DMW-3IA-20
002445 -41	DMW-3IA-25
002445 -42	Trip Blank-0227-1
002445 -43	Trip Blank-0227-2

A 6020B internal standard failed the acceptance criteria for sample MBB-8-GW. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

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

Several 8260D compounds in samples MBB-4-20, MBB-3-10, and MBB-1-20 exceeded the calibration range. The samples were reextracted with methanol, diluted, and reanalyzed. Both data sets were reported.

Methylene chloride was detected in the 8260D analysis of samples MBB-3-5, MBB-1-5, and MBB-1-10. The data were flagged as due to laboratory contamination.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/05/20  
Date Analyzed: 03/06/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
MBB-8-GW 002445-35	<100	87
MBB-10-GW 002445-36	130	92
Method Blank 00-394 MB	<100	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20 and 03/04/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
MBB-4-5 002445-01	<5	94
MBB-4-10 002445-02	<5	100
MBB-4-10a 002445-03	7.3	103
MBB-4-15 002445-04	<5	93
MBB-4-20 002445-05 1/5	210	110
MBB-4-25 002445-06	<5	93
MBB-3-5 002445-08	<5	93
MBB-3-10 002445-09 1/5	350	117
MBB-3-15 002445-10	<5	97
MBB-3-20 002445-12	<5	92
MBB-3-25 002445-13	52	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20 and 03/04/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 58-139)
MBB-2-5 002445-17	<5	93
MBB-2-10 002445-18	<5	100
MBB-2-15 002445-19	<5	104
MBB-2-20 002445-20	<5	104
MBB-2-20a 002445-21	<5	94
MBB-2-25 002445-22	<5	93
MBB-1-5 002445-24	<5	98
MBB-1-10 002445-25	<5	93
MBB-1-15 002445-26	7.7	103
MBB-1-20 002445-27 1/5	570	147
MBB-1-25 002445-28	<5	106

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20 and 03/04/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 58-139)
HMW-9D-5 002445-30	<5	99
HMW-9D-10 002445-31	<5	102
HMW-9D-15 002445-32	<5	93
HMW-9D-20 002445-33	<5	95
HMW-9D-25 002445-34	<5	102
DMW-3IA-5 002445-37	<5	101
DMW-3IA-10 002445-38	<5	101
DMW-3IA-15 002445-39	<5	87
DMW-3IA-20 002445-40	<5	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20 and 03/04/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 58-139)
DMW-3IA-25 002445-41	<5	94
Method Blank 00-392 MB	<5	91
Method Blank 00-393 MB	<5	105

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445  
 Date Extracted: 03/02/20  
 Date Analyzed: 03/02/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
MBB-4-5 002445-01	<50	<250	90
MBB-4-10 002445-02	<50	<250	79
MBB-4-10a 002445-03	<50	<250	90
MBB-4-15 002445-04	<50	<250	90
MBB-4-20 002445-05	140	<250	89
MBB-4-25 002445-06	<50	<250	89
MBB-3-5 002445-08	<50	<250	90
MBB-3-10 002445-09	<50	<250	89
MBB-3-15 002445-10	<50	<250	89
MBB-3-20 002445-12	<50	<250	88
MBB-3-25 002445-13	<50	<250	89
MBB-2-5 002445-17	<50	<250	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445  
 Date Extracted: 03/02/20  
 Date Analyzed: 03/02/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
MBB-2-10 002445-18	<50	<250	89
MBB-2-15 002445-19	<50	<250	89
MBB-2-20 002445-20	<50	<250	89
MBB-2-20a 002445-21	<50	<250	89
MBB-2-25 002445-22	<50	<250	89
MBB-1-5 002445-24	<50	<250	88
MBB-1-10 002445-25	<50	<250	89
MBB-1-15 002445-26	<50	<250	90
MBB-1-20 002445-27	<50	<250	89
MBB-1-25 002445-28	<50	<250	88
HMW-9D-5 002445-30	<50	<250	89
HMW-9D-10 002445-31	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445  
 Date Extracted: 03/02/20  
 Date Analyzed: 03/02/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 56-165)
HMW-9D-15 002445-32	<50	<250	96
HMW-9D-20 002445-33	<50	<250	89
HMW-9D-25 002445-34	<50	<250	89
DMW-3IA-5 002445-37	<50	<250	90
DMW-3IA-10 002445-38	<50	<250	97
DMW-3IA-15 002445-39	<50	<250	88
DMW-3IA-20 002445-40	<50	<250	89
DMW-3IA-25 002445-41	<50	<250	90
Method Blank 00-515 MB	<50	<250	87
Method Blank 00-516 MB	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445  
Date Extracted: 03/02/20  
Date Analyzed: 03/02/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 47-140)
MBB-10-GW 002445-36	96	<250	114
Method Blank 00-518 MB	<50	<250	115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-01
Date Analyzed:	03/05/20	Data File:	002445-01.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.44
Cadmium	<1
Chromium	28.2
Lead	5.37
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-02
Date Analyzed:	03/05/20	Data File:	002445-02.143
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.39
Cadmium	<1
Chromium	12.3
Lead	1.15
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-10a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-03
Date Analyzed:	03/05/20	Data File:	002445-03.144
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.28
Cadmium	<1
Chromium	14.4
Lead	1.18
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-04
Date Analyzed:	03/05/20	Data File:	002445-04.145
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.16
Cadmium	<1
Chromium	12.9
Lead	1.15
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-05
Date Analyzed:	03/05/20	Data File:	002445-05.146
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.44
Cadmium	<1
Chromium	13.2
Lead	3.42
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-4-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-06
Date Analyzed:	03/05/20	Data File:	002445-06.147
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.47
Cadmium	<1
Chromium	14.5
Lead	1.51
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-3-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-08
Date Analyzed:	03/05/20	Data File:	002445-08.148
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.27
Cadmium	<1
Chromium	34.8
Lead	2.88
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-3-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-09
Date Analyzed:	03/05/20	Data File:	002445-09.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.65
Cadmium	<1
Chromium	13.6
Lead	2.30
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-3-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-10
Date Analyzed:	03/05/20	Data File:	002445-10.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	12.1
Lead	1.07
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-3-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-12
Date Analyzed:	03/05/20	Data File:	002445-12.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.74
Cadmium	<1
Chromium	9.91
Lead	1.04
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-3-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-13
Date Analyzed:	03/05/20	Data File:	002445-13.154
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.52
Cadmium	<1
Chromium	15.1
Lead	1.69
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-17
Date Analyzed:	03/05/20	Data File:	002445-17.155
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.50
Cadmium	<1
Chromium	45.9
Lead	4.09
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-18
Date Analyzed:	03/05/20	Data File:	002445-18.156
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.53
Cadmium	<1
Chromium	11.2
Lead	1.11
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-19
Date Analyzed:	03/05/20	Data File:	002445-19.157
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.27
Cadmium	<1
Chromium	12.2
Lead	1.54
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-20
Date Analyzed:	03/05/20	Data File:	002445-20.158
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.21
Cadmium	<1
Chromium	11.7
Lead	1.12
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-20a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-21
Date Analyzed:	03/05/20	Data File:	002445-21.159
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.29
Cadmium	<1
Chromium	10.7
Lead	1.15
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-2-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-22
Date Analyzed:	03/05/20	Data File:	002445-22.160
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	12.0
Lead	1.12
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-1-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-24
Date Analyzed:	03/05/20	Data File:	002445-24.163
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.38
Cadmium	<1
Chromium	36.7
Lead	4.94
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-1-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-25
Date Analyzed:	03/05/20	Data File:	002445-25.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.69
Cadmium	<1
Chromium	15.8
Lead	1.27
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-1-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-26
Date Analyzed:	03/05/20	Data File:	002445-26.165
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.29
Cadmium	<1
Chromium	14.1
Lead	1.31
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-1-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-27
Date Analyzed:	03/05/20	Data File:	002445-27.168
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.23
Cadmium	<1
Chromium	11.7
Lead	1.29
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-1-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-28
Date Analyzed:	03/05/20	Data File:	002445-28.171
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.56
Cadmium	<1
Chromium	15.6
Lead	1.38
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9D-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-30
Date Analyzed:	03/05/20	Data File:	002445-30.172
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.78
Cadmium	<1
Chromium	13.6
Lead	2.80
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9D-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-31
Date Analyzed:	03/05/20	Data File:	002445-31.175
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.38
Cadmium	<1
Chromium	12.4
Lead	2.17
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9D-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-32
Date Analyzed:	03/05/20	Data File:	002445-32.176
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	15.3
Cadmium	<1
Chromium	18.2
Lead	10.9
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9D-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-33
Date Analyzed:	03/05/20	Data File:	002445-33.177
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.55
Cadmium	<1
Chromium	16.0
Lead	2.59
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9D-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-34
Date Analyzed:	03/05/20	Data File:	002445-34.178
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.46
Cadmium	<1
Chromium	12.3
Lead	1.25
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-37
Date Analyzed:	03/05/20	Data File:	002445-37.179
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.24
Cadmium	<1
Chromium	14.4
Lead	1.59
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-38
Date Analyzed:	03/05/20	Data File:	002445-38.180
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.46
Cadmium	<1
Chromium	15.5
Lead	1.45
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-39
Date Analyzed:	03/05/20	Data File:	002445-39.181
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.47
Cadmium	<1
Chromium	12.5
Lead	1.22
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-40
Date Analyzed:	03/05/20	Data File:	002445-40.182
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.32
Cadmium	<1
Chromium	13.0
Lead	1.26
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-41
Date Analyzed:	03/05/20	Data File:	002445-41.183
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	1.24
Cadmium	<1
Chromium	21.1
Lead	1.96
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	I0-133 mb2
Date Analyzed:	03/05/20	Data File:	I0-133 mb2.079
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	I0-134 mb2
Date Analyzed:	03/05/20	Data File:	I0-134 mb2.166
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-35
Date Analyzed:	03/05/20	Data File:	002445-35.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	10.5
Cadmium	<1
Chromium	118 J
Lead	7.82
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-8-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-35 x10
Date Analyzed:	03/06/20	Data File:	002445-35 x10.043
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Chromium	192
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MBB-10-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-36
Date Analyzed:	03/05/20	Data File:	002445-36.133
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.32
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	I0-138 mb
Date Analyzed:	03/05/20	Data File:	I0-138 mb.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MBB-10-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-36
Date Analyzed:	03/06/20	Data File:	002445-36.229
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.22
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	I0-139 mb
Date Analyzed:	03/06/20	Data File:	I0-139 mb.228
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MBB-8-GW f	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	002445-35
Date Analyzed:	03/05/20	Data File:	002445-35.092
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 002445
Date Extracted:	03/05/20	Lab ID:	I0-140 mb
Date Analyzed:	03/05/20	Data File:	I0-140 mb.089
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-01
Date Analyzed:	03/03/20	Data File:	030322.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-02
Date Analyzed:	03/03/20	Data File:	030323.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.0052
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	0.011
1,1-Dichloroethane	<0.005	o-Xylene	0.0072
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.022
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-10a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-03
Date Analyzed:	03/03/20	Data File:	030324.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.025
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	0.035
1,1-Dichloroethane	<0.005	o-Xylene	0.015
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.11
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-04
Date Analyzed:	03/03/20	Data File:	030325.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-05
Date Analyzed:	03/05/20	Data File:	030521.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	513 ip	50	150
4-Bromofluorobenzene	153 ip	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.68 ve
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	1.9 ve
1,1-Dichloroethane	<0.005	o-Xylene	1.3 ve
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	1.0 ve
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	0.066	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	0.51 ve	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-4-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-06
Date Analyzed:	03/03/20	Data File:	030326.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.0060
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-3-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-08
Date Analyzed:	03/03/20	Data File:	030327.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.024 ca lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-3-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-09
Date Analyzed:	03/05/20	Data File:	030522.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	189 ip	50	150
4-Bromofluorobenzene	120	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.45 ve
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	1.5 ve
1,1-Dichloroethane	<0.005	o-Xylene	0.72 ve
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.83 ve
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	0.017	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	0.11	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-3-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/12/20	Lab ID:	002445-10
Date Analyzed:	03/12/20	Data File:	031207.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-3-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-12
Date Analyzed:	03/04/20	Data File:	030440.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-3-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-13
Date Analyzed:	03/04/20	Data File:	030441.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.021
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	0.030
1,1-Dichloroethane	<0.005	o-Xylene	0.015
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.096
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-17
Date Analyzed:	03/04/20	Data File:	030442.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-18
Date Analyzed:	03/04/20	Data File:	030443.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-19
Date Analyzed:	03/04/20	Data File:	030444.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-20
Date Analyzed:	03/04/20	Data File:	030445.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-20a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-21
Date Analyzed:	03/04/20	Data File:	030446.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-2-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-22
Date Analyzed:	03/04/20	Data File:	030447.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	50	150
Toluene-d8	110	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-1-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-24
Date Analyzed:	03/04/20	Data File:	030448.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.020 lc j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-1-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-25
Date Analyzed:	03/04/20	Data File:	030449.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	111	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.023 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-1-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-26
Date Analyzed:	03/09/20	Data File:	030913.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	116	50	150
Toluene-d8	86	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-1-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-27
Date Analyzed:	03/05/20	Data File:	030524.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	151 ip	50	150
4-Bromofluorobenzene	113	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	0.15
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	0.042
1,1-Dichloroethane	<0.005	o-Xylene	0.030
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	0.22 ve
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	MBB-1-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-28
Date Analyzed:	03/05/20	Data File:	030450.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9D-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-30
Date Analyzed:	03/05/20	Data File:	030451.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9D-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-31
Date Analyzed:	03/05/20	Data File:	030452.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.027 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9D-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-32
Date Analyzed:	03/05/20	Data File:	030453.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9D-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-33
Date Analyzed:	03/05/20	Data File:	030454.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	HMW-9D-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-34
Date Analyzed:	03/04/20	Data File:	030439.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	0.022 lc	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-3IA-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-37
Date Analyzed:	03/05/20	Data File:	030515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-3IA-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-38
Date Analyzed:	03/05/20	Data File:	030516.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-3IA-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-39
Date Analyzed:	03/05/20	Data File:	030517.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-3IA-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-40
Date Analyzed:	03/05/20	Data File:	030518.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	DMW-3IA-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	002445-41
Date Analyzed:	03/05/20	Data File:	030519.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	00-499 mb
Date Analyzed:	03/03/20	Data File:	030314.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/03/20	Lab ID:	00-498 mb
Date Analyzed:	03/03/20	Data File:	030315.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025 ca
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Direct Sparge

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/12/20	Lab ID:	00-609 mb
Date Analyzed:	03/12/20	Data File:	031211.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.05	1,3-Dichloropropane	<0.005
Vinyl chloride	<0.005	Tetrachloroethene	<0.025
Chloroethane	<0.05	Dibromochloromethane	<0.005
Trichlorofluoromethane	<0.05	Chlorobenzene	<0.005
1,1-Dichloroethene	<0.005	Ethylbenzene	<0.005
Methylene chloride	<0.02 j	1,1,1,2-Tetrachloroethane	<0.005
trans-1,2-Dichloroethene	<0.001	m,p-Xylene	<0.01
1,1-Dichloroethane	<0.005	o-Xylene	<0.005
2,2-Dichloropropane	<0.005	1,1,2,2-Tetrachloroethane	<0.005
cis-1,2-Dichloroethene	<0.005	1,2,3-Trichloropropane	<0.005
Chloroform	<0.005	2-Chlorotoluene	<0.005
1,1,1-Trichloroethane	<0.005	4-Chlorotoluene	<0.005
1,1-Dichloropropene	<0.005	1,2,4-Trimethylbenzene	<0.005
Carbon tetrachloride	<0.005	1,3-Dichlorobenzene	<0.005
Benzene	<0.003	1,4-Dichlorobenzene	<0.005
Trichloroethene	<0.03	1,2-Dichlorobenzene	<0.005
1,2-Dichloropropane	<0.001	1,2-Dibromo-3-chloropropane	<0.05
Bromodichloromethane	<0.005	Hexachlorobutadiene	<0.025
Toluene	<0.005	1,2,3-Trichlorobenzene	<0.025
1,1,2-Trichloroethane	<0.005		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-4-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/06/20	Lab ID:	002445-05
Date Analyzed:	03/10/20	Data File:	031017.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	97	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.5	1,3-Dichloropropane	<0.05
Vinyl chloride	<0.05	Tetrachloroethene	<0.025
Chloroethane	<0.5	Dibromochloromethane	<0.05
Trichlorofluoromethane	<0.5	Chlorobenzene	<0.05
1,1-Dichloroethene	<0.05	Ethylbenzene	0.15
Methylene chloride	<0.5	1,1,1,2-Tetrachloroethane	<0.05
trans-1,2-Dichloroethene	<0.05	m,p-Xylene	0.51
1,1-Dichloroethane	<0.05	o-Xylene	0.18
2,2-Dichloropropane	<0.05	1,1,2,2-Tetrachloroethane	<0.05
cis-1,2-Dichloroethene	<0.05	1,2,3-Trichloropropane	<0.05
Chloroform	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	1,2,4-Trimethylbenzene	1.2
Carbon tetrachloride	<0.05	1,3-Dichlorobenzene	<0.05
Benzene	<0.03	1,4-Dichlorobenzene	<0.05
Trichloroethene	<0.02	1,2-Dichlorobenzene	<0.05
1,2-Dichloropropane	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Bromodichloromethane	<0.05	Hexachlorobutadiene	<0.25
Toluene	<0.05	1,2,3-Trichlorobenzene	<0.25
1,1,2-Trichloroethane	<0.05		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-3-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/06/20	Lab ID:	002445-09
Date Analyzed:	03/10/20	Data File:	031018.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	101	55	145
4-Bromofluorobenzene	111	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.5	1,3-Dichloropropane	<0.05
Vinyl chloride	<0.05	Tetrachloroethene	<0.025
Chloroethane	<0.5	Dibromochloromethane	<0.05
Trichlorofluoromethane	<0.5	Chlorobenzene	<0.05
1,1-Dichloroethene	<0.05	Ethylbenzene	0.82
Methylene chloride	<0.5	1,1,1,2-Tetrachloroethane	<0.05
trans-1,2-Dichloroethene	<0.05	m,p-Xylene	2.5
1,1-Dichloroethane	<0.05	o-Xylene	0.50
2,2-Dichloropropane	<0.05	1,1,2,2-Tetrachloroethane	<0.05
cis-1,2-Dichloroethene	<0.05	1,2,3-Trichloropropane	<0.05
Chloroform	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	1,2,4-Trimethylbenzene	5.9
Carbon tetrachloride	<0.05	1,3-Dichlorobenzene	<0.05
Benzene	<0.03	1,4-Dichlorobenzene	<0.05
Trichloroethene	<0.02	1,2-Dichlorobenzene	<0.05
1,2-Dichloropropane	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Bromodichloromethane	<0.05	Hexachlorobutadiene	<0.25
Toluene	0.093	1,2,3-Trichlorobenzene	<0.25
1,1,2-Trichloroethane	<0.05		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-1-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/06/20	Lab ID:	002445-27
Date Analyzed:	03/10/20	Data File:	031019.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	145
Toluene-d8	102	55	145
4-Bromofluorobenzene	108	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.5	1,3-Dichloropropane	<0.05
Vinyl chloride	<0.05	Tetrachloroethene	<0.025
Chloroethane	<0.5	Dibromochloromethane	<0.05
Trichlorofluoromethane	<0.5	Chlorobenzene	<0.05
1,1-Dichloroethene	<0.05	Ethylbenzene	0.72
Methylene chloride	<0.5	1,1,1,2-Tetrachloroethane	<0.05
trans-1,2-Dichloroethene	<0.05	m,p-Xylene	0.21
1,1-Dichloroethane	<0.05	o-Xylene	0.13
2,2-Dichloropropane	<0.05	1,1,2,2-Tetrachloroethane	<0.05
cis-1,2-Dichloroethene	<0.05	1,2,3-Trichloropropane	<0.05
Chloroform	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	1,2,4-Trimethylbenzene	1.9
Carbon tetrachloride	<0.05	1,3-Dichlorobenzene	<0.05
Benzene	<0.03	1,4-Dichlorobenzene	<0.05
Trichloroethene	<0.02	1,2-Dichlorobenzene	<0.05
1,2-Dichloropropane	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Bromodichloromethane	<0.05	Hexachlorobutadiene	<0.25
Toluene	<0.05	1,2,3-Trichlorobenzene	<0.25
1,1,2-Trichloroethane	<0.05		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/06/20	Lab ID:	00-561 mb2
Date Analyzed:	03/06/20	Data File:	030615.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	62	145
Toluene-d8	92	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Chloromethane	<0.5	1,3-Dichloropropane	<0.05
Vinyl chloride	<0.05	Tetrachloroethene	<0.025
Chloroethane	<0.5	Dibromochloromethane	<0.05
Trichlorofluoromethane	<0.5	Chlorobenzene	<0.05
1,1-Dichloroethene	<0.05	Ethylbenzene	<0.05
Methylene chloride	<0.5	1,1,1,2-Tetrachloroethane	<0.05
trans-1,2-Dichloroethene	<0.05	m,p-Xylene	<0.1
1,1-Dichloroethane	<0.05	o-Xylene	<0.05
2,2-Dichloropropane	<0.05	1,1,2,2-Tetrachloroethane	<0.05
cis-1,2-Dichloroethene	<0.05	1,2,3-Trichloropropane	<0.05
Chloroform	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	1,2,4-Trimethylbenzene	<0.05
Carbon tetrachloride	<0.05	1,3-Dichlorobenzene	<0.05
Benzene	<0.03	1,4-Dichlorobenzene	<0.05
Trichloroethene	<0.02	1,2-Dichlorobenzene	<0.05
1,2-Dichloropropane	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Bromodichloromethane	<0.05	Hexachlorobutadiene	<0.25
Toluene	<0.05	1,2,3-Trichlorobenzene	<0.25
1,1,2-Trichloroethane	<0.05		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-8-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-35
Date Analyzed:	03/02/20	Data File:	030250.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	0.25	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MBB-10-GW	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-36
Date Analyzed:	03/02/20	Data File:	030251.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	0.88	Tetrachloroethene	98
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	0.86	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	0.27	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	130	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	59	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Trip Blank-0227-1	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-42
Date Analyzed:	03/02/20	Data File:	030252.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Trip Blank-0227-2	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-43
Date Analyzed:	03/03/20	Data File:	030253.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	00-489 mb
Date Analyzed:	03/02/20	Data File:	030212.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.03 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-01 1/5
Date Analyzed:	03/03/20	Data File:	030307.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	93	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-02 1/5
Date Analyzed:	03/03/20	Data File:	030230.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-10a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-03 1/5
Date Analyzed:	03/03/20	Data File:	030231.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-04 1/5
Date Analyzed:	03/03/20	Data File:	030232.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	82	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-05 1/5
Date Analyzed:	03/03/20	Data File:	030233.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	163
Benzo(a)anthracene-d12	92	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.74
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-4-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-06 1/5
Date Analyzed:	03/03/20	Data File:	030314.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	66	31	163
Benzo(a)anthracene-d12	86	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-3-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-08 1/5
Date Analyzed:	03/03/20	Data File:	030315.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	67	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

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ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-3-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-09 1/5
Date Analyzed:	03/03/20	Data File:	030316.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	86	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-3-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-10 1/5
Date Analyzed:	03/03/20	Data File:	030317.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	65	31	163
Benzo(a)anthracene-d12	81	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-3-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-12 1/5
Date Analyzed:	03/03/20	Data File:	030321.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	69	31	163
Benzo(a)anthracene-d12	84	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-3-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-13 1/5
Date Analyzed:	03/03/20	Data File:	030322.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	93	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.092
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-17 1/5
Date Analyzed:	03/03/20	Data File:	030323.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	64	31	163
Benzo(a)anthracene-d12	74	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-18 1/5
Date Analyzed:	03/03/20	Data File:	030324.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	70	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-19 1/5
Date Analyzed:	03/03/20	Data File:	030325.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-20 1/5
Date Analyzed:	03/03/20	Data File:	030326.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	81	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-20a	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-21 1/5
Date Analyzed:	03/03/20	Data File:	030327.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	67	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-2-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-22 1/5
Date Analyzed:	03/03/20	Data File:	030328.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	70	31	163
Benzo(a)anthracene-d12	84	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-1-5	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-24 1/5
Date Analyzed:	03/03/20	Data File:	030329.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	73	31	163
Benzo(a)anthracene-d12	84	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-1-10	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-25 1/5
Date Analyzed:	03/03/20	Data File:	030330.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-1-15	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-26 1/5
Date Analyzed:	03/03/20	Data File:	030331.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-1-20	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-27 1/5
Date Analyzed:	03/03/20	Data File:	030332.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	163
Benzo(a)anthracene-d12	94	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.024
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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MBB-1-25	Client:	Hart Crowser
Date Received:	02/28/20	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	002445-28 1/5
Date Analyzed:	03/04/20	Data File:	030333.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	73	31	163
Benzo(a)anthracene-d12	86	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	00-514 mb 1/5
Date Analyzed:	03/03/20	Data File:	030306.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	91	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 002445
Date Extracted:	03/02/20	Lab ID:	00-512 mb 1/5
Date Analyzed:	03/02/20	Data File:	030217.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	90	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 002413-01 (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	108	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
Date Received: 02/28/20  
Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 002445-01 (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)	20	100	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 002445-28 (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)	20	110	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002445-01 (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	<50	90	88	63-146	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 002445-27 (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	55	91	91	63-146	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	79-144

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	112	61-133	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
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 Project: MMB, F&BI 002445

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

Laboratory Code: 002445-01 (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	2.15	83	87	75-125	5
Cadmium	mg/kg (ppm)	10	<1	92	95	75-125	3
Chromium	mg/kg (ppm)	50	24.9	81	88	75-125	8
Lead	mg/kg (ppm)	50	4.72	100	105	75-125	5
Mercury	mg/kg (ppm)	5	<1	98	101	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	97	80-120
Lead	mg/kg (ppm)	50	102	80-120
Mercury	mg/kg (ppm)	5	102	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445

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

Laboratory Code: 002445-27 (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	1.15	91	88	75-125	3
Cadmium	mg/kg (ppm)	10	<1	102	97	75-125	5
Chromium	mg/kg (ppm)	50	10.8	95	92	75-125	3
Lead	mg/kg (ppm)	50	1.20	104	100	75-125	4
Mercury	mg/kg (ppm)	5	<1	90	101	75-125	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	92	80-120
Lead	mg/kg (ppm)	50	100	80-120
Mercury	mg/kg (ppm)	5	100	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
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 Project: MMB, F&BI 002445

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

Laboratory Code: 002447-01 (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	1.79	89	87	75-125	2
Cadmium	ug/L (ppb)	5	<1	94	94	75-125	0
Chromium	ug/L (ppb)	20	<1	91	92	75-125	1
Lead	ug/L (ppb)	10	<1	83	81	75-125	2
Mercury	ug/L (ppb)	5	<1	85	85	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	100	80-120
Cadmium	ug/L (ppb)	5	96	80-120
Chromium	ug/L (ppb)	20	95	80-120
Lead	ug/L (ppb)	10	96	80-120
Mercury	ug/L (ppb)	5	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445

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

Laboratory Code: 002445-36 (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	3.11	97	94	75-125	3
Cadmium	ug/L (ppb)	5	<1	94	93	75-125	1
Chromium	ug/L (ppb)	20	<1	98	96	75-125	2
Lead	ug/L (ppb)	10	<1	87	84	75-125	4
Mercury	ug/L (ppb)	5	<1	89	87	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-120
Cadmium	ug/L (ppb)	5	94	80-120
Chromium	ug/L (ppb)	20	96	80-120
Lead	ug/L (ppb)	10	92	80-120
Mercury	ug/L (ppb)	5	91	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	94	94	80-120	0
Cadmium	ug/L (ppb)	5	91	91	80-120	0
Chromium	ug/L (ppb)	20	101	97	80-120	4
Lead	ug/L (ppb)	10	95	93	80-120	2
Mercury	ug/L (ppb)	5	87	89	80-120	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20  
 Date Received: 02/28/20  
 Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
 FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 002445-34 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

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Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	96	98	58-137	2
Vinyl chloride	mg/kg (ppm)	0.05	92	93	60-136	1
Chloroethane	mg/kg (ppm)	0.05	94	95	65-132	1
Trichlorofluoromethane	mg/kg (ppm)	0.05	93	95	66-133	2
1,1-Dichloroethene	mg/kg (ppm)	0.05	92	94	70-130	2
Methylene chloride	mg/kg (ppm)	0.05	120	120	52-150	0
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	98	99	70-130	1
1,1-Dichloroethane	mg/kg (ppm)	0.05	100	102	70-130	2
2,2-Dichloropropane	mg/kg (ppm)	0.05	93	101	70-130	8
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	100	102	70-130	2
Chloroform	mg/kg (ppm)	0.05	100	100	70-130	0
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	97	99	70-130	2
1,1-Dichloropropene	mg/kg (ppm)	0.05	96	95	70-130	1
Carbon tetrachloride	mg/kg (ppm)	0.05	95	97	70-130	2
Benzene	mg/kg (ppm)	0.05	100	99	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	96	95	70-130	1
1,2-Dichloropropane	mg/kg (ppm)	0.05	104	103	70-130	1
Bromodichloromethane	mg/kg (ppm)	0.05	103	101	70-130	2
Toluene	mg/kg (ppm)	0.05	101	97	70-130	4
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	101	98	70-130	3
1,3-Dichloropropane	mg/kg (ppm)	0.05	102	100	70-130	2
Tetrachloroethene	mg/kg (ppm)	0.05	96	92	70-130	4
Dibromochloromethane	mg/kg (ppm)	0.05	102	99	70-130	3
Chlorobenzene	mg/kg (ppm)	0.05	100	95	70-130	5
Ethylbenzene	mg/kg (ppm)	0.05	102	96	70-130	6
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	104	102	70-130	2
m,p-Xylene	mg/kg (ppm)	0.1	103	97	70-130	6
o-Xylene	mg/kg (ppm)	0.05	105	99	70-130	6
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	92	92	70-130	0
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	91	92	70-130	1
2-Chlorotoluene	mg/kg (ppm)	0.05	102	95	70-130	7
4-Chlorotoluene	mg/kg (ppm)	0.05	102	95	70-130	7
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	102	95	70-130	7
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	102	97	70-130	5
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	103	95	70-130	8
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	102	96	70-130	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	85	87	70-130	2
Hexachlorobutadiene	mg/kg (ppm)	0.05	99	90	70-130	10
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	102	99	65-131	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 002445-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	0.010	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	0.0049	0.031	145 vo
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	0.0099	0.11	167 vo
o-Xylene	mg/kg (ppm)	0.0067	0.073	166 vo
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.020	0.40	181 vo
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

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Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	108	94	58-137	14
Vinyl chloride	mg/kg (ppm)	0.05	100	89	60-136	12
Chloroethane	mg/kg (ppm)	0.05	105	90	65-132	15
Trichlorofluoromethane	mg/kg (ppm)	0.05	100	90	66-133	11
1,1-Dichloroethene	mg/kg (ppm)	0.05	100	88	70-130	13
Methylene chloride	mg/kg (ppm)	0.05	124	125	52-150	1
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	103	92	70-130	11
1,1-Dichloroethane	mg/kg (ppm)	0.05	102	97	70-130	5
2,2-Dichloropropane	mg/kg (ppm)	0.05	104	95	70-130	9
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	102	97	70-130	5
Chloroform	mg/kg (ppm)	0.05	100	96	70-130	4
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	102	93	70-130	9
1,1-Dichloropropene	mg/kg (ppm)	0.05	88	93	70-130	6
Carbon tetrachloride	mg/kg (ppm)	0.05	99	91	70-130	8
Benzene	mg/kg (ppm)	0.05	97	98	70-130	1
Trichloroethene	mg/kg (ppm)	0.05	89	94	70-130	5
1,2-Dichloropropane	mg/kg (ppm)	0.05	104	104	70-130	0
Bromodichloromethane	mg/kg (ppm)	0.05	101	102	70-130	1
Toluene	mg/kg (ppm)	0.05	93	96	70-130	3
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	95	102	70-130	7
1,3-Dichloropropane	mg/kg (ppm)	0.05	97	103	70-130	6
Tetrachloroethene	mg/kg (ppm)	0.05	86	91	70-130	6
Dibromochloromethane	mg/kg (ppm)	0.05	98	102	70-130	4
Chlorobenzene	mg/kg (ppm)	0.05	94	95	70-130	1
Ethylbenzene	mg/kg (ppm)	0.05	96	94	70-130	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	101	98	70-130	3
m,p-Xylene	mg/kg (ppm)	0.1	96	94	70-130	2
o-Xylene	mg/kg (ppm)	0.05	99	94	70-130	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	89	95	70-130	7
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	88	94	70-130	7
2-Chlorotoluene	mg/kg (ppm)	0.05	96	94	70-130	2
4-Chlorotoluene	mg/kg (ppm)	0.05	95	94	70-130	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	95	91	70-130	4
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	96	92	70-130	4
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	95	91	70-130	4
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	98	92	70-130	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	82	83	70-130	1
Hexachlorobutadiene	mg/kg (ppm)	0.05	83	74	70-130	11
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	96	85	65-131	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

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Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003160-04 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	82	83	70-130	1
Vinyl chloride	mg/kg (ppm)	0.05	85	87	70-130	2
Chloroethane	mg/kg (ppm)	0.05	82	84	70-130	2
Trichlorofluoromethane	mg/kg (ppm)	0.05	83	86	70-130	4
1,1-Dichloroethene	mg/kg (ppm)	0.05	84	88	70-130	5
Methylene chloride	mg/kg (ppm)	0.05	72	75	70-130	4
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	84	89	70-130	6
1,1-Dichloroethane	mg/kg (ppm)	0.05	86	90	70-130	5
2,2-Dichloropropane	mg/kg (ppm)	0.05	82	83	70-130	1
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	86	90	70-130	5
Chloroform	mg/kg (ppm)	0.05	90	92	70-130	2
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	85	87	70-130	2
1,1-Dichloropropene	mg/kg (ppm)	0.05	95	98	70-130	3
Carbon tetrachloride	mg/kg (ppm)	0.05	85	88	70-130	3
Benzene	mg/kg (ppm)	0.05	90	92	70-130	2
Trichloroethene	mg/kg (ppm)	0.05	99	103	70-130	4
1,2-Dichloropropane	mg/kg (ppm)	0.05	102	103	70-130	1
Bromodichloromethane	mg/kg (ppm)	0.05	103	104	70-130	1
Toluene	mg/kg (ppm)	0.05	99	102	70-130	3
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	106	109	70-130	3
1,3-Dichloropropane	mg/kg (ppm)	0.05	109	112	70-130	3
Tetrachloroethene	mg/kg (ppm)	0.05	98	103	70-130	5
Dibromochloromethane	mg/kg (ppm)	0.05	104	106	70-130	2
Chlorobenzene	mg/kg (ppm)	0.05	100	105	70-130	5
Ethylbenzene	mg/kg (ppm)	0.05	97	101	70-130	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	87	91	70-130	4
m,p-Xylene	mg/kg (ppm)	0.1	98	102	70-130	4
o-Xylene	mg/kg (ppm)	0.05	93	97	70-130	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	107	111	70-130	4
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	106	111	70-130	5
2-Chlorotoluene	mg/kg (ppm)	0.05	106	110	70-130	4
4-Chlorotoluene	mg/kg (ppm)	0.05	110	114	70-130	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	104	107	70-130	3
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	105	109	70-130	4
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	106	108	70-130	2
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	101	104	70-130	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	101	106	70-130	5
Hexachlorobutadiene	mg/kg (ppm)	0.05	100	102	70-130	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	95	101	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

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Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: 003160-04 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet wt)	Duplicate Result (Wet wt)	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	<0.05	<0.05	nm
Vinyl chloride	mg/kg (ppm)	<0.005	<0.005	nm
Chloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichlorofluoromethane	mg/kg (ppm)	<0.05	<0.05	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Methylene chloride	mg/kg (ppm)	<0.02	<0.02	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	<0.001	<0.001	nm
1,1-Dichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
2,2-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	<0.005	<0.005	nm
Chloroform	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,1-Dichloropropene	mg/kg (ppm)	<0.005	<0.005	nm
Carbon tetrachloride	mg/kg (ppm)	<0.005	<0.005	nm
Benzene	mg/kg (ppm)	<0.003	<0.003	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	nm
1,2-Dichloropropane	mg/kg (ppm)	<0.001	<0.001	nm
Bromodichloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Toluene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2-Trichloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm
Dibromochloromethane	mg/kg (ppm)	<0.005	<0.005	nm
Chlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
Ethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
m,p-Xylene	mg/kg (ppm)	<0.01	<0.01	nm
o-Xylene	mg/kg (ppm)	<0.005	<0.005	nm
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	<0.005	<0.005	nm
1,2,3-Trichloropropane	mg/kg (ppm)	<0.005	<0.005	nm
2-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
4-Chlorotoluene	mg/kg (ppm)	<0.005	<0.005	nm
1,2,4-Trimethylbenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,3-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,4-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dichlorobenzene	mg/kg (ppm)	<0.005	<0.005	nm
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	<0.05	<0.05	nm
Hexachlorobutadiene	mg/kg (ppm)	<0.025	<0.025	nm
1,2,3-Trichlorobenzene	mg/kg (ppm)	<0.025	<0.025	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260D DIRECT SPARGE**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	0.05	82	83	70-130	1
Vinyl chloride	mg/kg (ppm)	0.05	85	87	70-130	2
Chloroethane	mg/kg (ppm)	0.05	82	84	70-130	2
Trichlorofluoromethane	mg/kg (ppm)	0.05	83	86	70-130	4
1,1-Dichloroethene	mg/kg (ppm)	0.05	84	88	70-130	5
Methylene chloride	mg/kg (ppm)	0.05	72	75	70-130	4
trans-1,2-Dichloroethene	mg/kg (ppm)	0.05	84	89	70-130	6
1,1-Dichloroethane	mg/kg (ppm)	0.05	86	90	70-130	5
2,2-Dichloropropane	mg/kg (ppm)	0.05	82	83	70-130	1
cis-1,2-Dichloroethene	mg/kg (ppm)	0.05	86	90	70-130	5
Chloroform	mg/kg (ppm)	0.05	90	92	70-130	2
1,1,1-Trichloroethane	mg/kg (ppm)	0.05	85	87	70-130	2
1,1-Dichloropropene	mg/kg (ppm)	0.05	95	98	70-130	3
Carbon tetrachloride	mg/kg (ppm)	0.05	85	88	70-130	3
Benzene	mg/kg (ppm)	0.05	90	92	70-130	2
Trichloroethene	mg/kg (ppm)	0.05	99	103	70-130	4
1,2-Dichloropropane	mg/kg (ppm)	0.05	102	103	70-130	1
Bromodichloromethane	mg/kg (ppm)	0.05	103	104	70-130	1
Toluene	mg/kg (ppm)	0.05	99	102	70-130	3
1,1,2-Trichloroethane	mg/kg (ppm)	0.05	106	109	70-130	3
1,3-Dichloropropane	mg/kg (ppm)	0.05	109	112	70-130	3
Tetrachloroethene	mg/kg (ppm)	0.05	98	103	70-130	5
Dibromochloromethane	mg/kg (ppm)	0.05	104	106	70-130	2
Chlorobenzene	mg/kg (ppm)	0.05	100	105	70-130	5
Ethylbenzene	mg/kg (ppm)	0.05	97	101	70-130	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	0.05	87	91	70-130	4
m,p-Xylene	mg/kg (ppm)	0.1	98	102	70-130	4
o-Xylene	mg/kg (ppm)	0.05	93	97	70-130	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	0.05	107	111	70-130	4
1,2,3-Trichloropropane	mg/kg (ppm)	0.05	106	111	70-130	5
2-Chlorotoluene	mg/kg (ppm)	0.05	106	110	70-130	4
4-Chlorotoluene	mg/kg (ppm)	0.05	110	114	70-130	4
1,2,4-Trimethylbenzene	mg/kg (ppm)	0.05	104	107	70-130	3
1,3-Dichlorobenzene	mg/kg (ppm)	0.05	105	109	70-130	4
1,4-Dichlorobenzene	mg/kg (ppm)	0.05	106	108	70-130	2
1,2-Dichlorobenzene	mg/kg (ppm)	0.05	101	104	70-130	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	0.05	101	106	70-130	5
Hexachlorobutadiene	mg/kg (ppm)	0.05	100	102	70-130	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	0.05	95	101	70-130	6

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

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Project: MMB, F&BI 002445

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

Laboratory Code: 003098-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chloromethane	mg/kg (ppm)	2.5	<0.5	46	44	10-126	4
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	49	47	10-138	4
Chloroethane	mg/kg (ppm)	2.5	<0.5	60	57	10-176	5
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	63	61	10-176	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	73	73	10-160	0
Methylene chloride	mg/kg (ppm)	2.5	<0.5	82	81	10-156	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	77	77	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	82	81	19-140	1
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	38	37	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	83	25-135	2
Chloroform	mg/kg (ppm)	2.5	<0.05	86	85	21-145	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	86	85	10-156	1
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	81	80	17-140	1
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	90	89	9-164	1
Benzene	mg/kg (ppm)	2.5	<0.03	81	81	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	0.061	96	102	21-139	6
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	86	86	30-135	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	90	92	23-155	2
Toluene	mg/kg (ppm)	2.5	<0.05	88	88	35-130	0
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	99	97	10-205	2
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	95	95	31-137	0
Tetrachloroethene	mg/kg (ppm)	2.5	0.74	66 b	67 b	20-133	2 b
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	98	99	28-150	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	89	89	32-129	0
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	89	89	32-137	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	100	98	31-143	2
m,p-Xylene	mg/kg (ppm)	5	<0.1	89	88	34-136	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	91	89	33-134	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	76	68	28-140	11
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	98	97	25-144	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	91	92	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	90	91	31-136	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	92	93	10-182	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	87	87	30-131	0
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	85	87	29-129	2
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	88	88	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	98	98	11-161	0
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	83	82	10-142	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	94	91	20-144	3

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**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
Chloromethane	mg/kg (ppm)	2.5	71	27-133
Vinyl chloride	mg/kg (ppm)	2.5	76	22-139
Chloroethane	mg/kg (ppm)	2.5	91	9-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	91	10-196
1,1-Dichloroethene	mg/kg (ppm)	2.5	103	47-128
Methylene chloride	mg/kg (ppm)	2.5	107	42-132
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	104	67-129
1,1-Dichloroethane	mg/kg (ppm)	2.5	98	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	118	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	103	72-127
Chloroform	mg/kg (ppm)	2.5	101	66-120
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	109	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	89	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	114	60-139
Benzene	mg/kg (ppm)	2.5	90	68-114
Trichloroethene	mg/kg (ppm)	2.5	84	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	90	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	92	72-130
Toluene	mg/kg (ppm)	2.5	101	66-126
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	101	75-113
1,3-Dichloropropane	mg/kg (ppm)	2.5	94	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	101	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	102	74-125
Chlorobenzene	mg/kg (ppm)	2.5	99	76-111
Ethylbenzene	mg/kg (ppm)	2.5	105	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	122	69-135
m,p-Xylene	mg/kg (ppm)	5	105	78-122
o-Xylene	mg/kg (ppm)	2.5	110	77-124
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	105	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	103	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	104	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	100	75-122
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	107	76-125
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	100	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	97	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	102	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	113	58-138
Hexachlorobutadiene	mg/kg (ppm)	2.5	113	50-153
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	109	63-138

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Project: MMB, F&BI 002445

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

Laboratory Code: 002464-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chloromethane	ug/L (ppb)	50	<10	74	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	79	36-166
Chloroethane	ug/L (ppb)	50	<1	85	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	90	44-165
1,1-Dichloroethene	ug/L (ppb)	50	<1	89	60-136
Methylene chloride	ug/L (ppb)	50	<5	87	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	90	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	89	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	97	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	93	71-127
Chloroform	ug/L (ppb)	50	<1	92	65-132
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	89	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	101	56-152
Benzene	ug/L (ppb)	50	<0.35	87	76-125
Trichloroethene	ug/L (ppb)	50	<1	86	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	91	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Toluene	ug/L (ppb)	50	2.0	97	76-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	68-131
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	113	70-139
Chlorobenzene	ug/L (ppb)	50	<1	96	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	112	73-137
m,p-Xylene	ug/L (ppb)	100	2.2	99	69-135
o-Xylene	ug/L (ppb)	50	1.3	99	60-140
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	102	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	99	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	99	65-130
1,2,4-Trimethylbenzene	ug/L (ppb)	50	1.9	101	59-146
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	105	32-164
Hexachlorobutadiene	ug/L (ppb)	50	<1	95	60-143
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	98	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**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)	50	89	83	45-156	7
Vinyl chloride	ug/L (ppb)	50	92	84	50-154	9
Chloroethane	ug/L (ppb)	50	90	86	58-146	5
Trichlorofluoromethane	ug/L (ppb)	250	94	91	50-150	3
1,1-Dichloroethene	ug/L (ppb)	50	93	91	67-136	2
Methylene chloride	ug/L (ppb)	50	89	90	39-148	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	88	89	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	90	90	79-121	0
2,2-Dichloropropane	ug/L (ppb)	50	98	96	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	94	80-123	2
Chloroform	ug/L (ppb)	50	93	93	80-121	0
1,1,1-Trichloroethane	ug/L (ppb)	50	95	96	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	92	93	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	103	105	75-158	2
Benzene	ug/L (ppb)	50	90	91	69-134	1
Trichloroethene	ug/L (ppb)	50	89	90	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	96	98	77-123	2
Bromodichloromethane	ug/L (ppb)	50	105	106	81-133	1
Toluene	ug/L (ppb)	50	98	101	72-122	3
1,1,2-Trichloroethane	ug/L (ppb)	50	108	110	75-124	2
1,3-Dichloropropane	ug/L (ppb)	50	104	107	76-126	3
Tetrachloroethene	ug/L (ppb)	50	98	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	120	121	84-133	1
Chlorobenzene	ug/L (ppb)	50	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	102	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	115	114	84-127	1
m,p-Xylene	ug/L (ppb)	100	100	102	81-112	2
o-Xylene	ug/L (ppb)	50	100	99	81-121	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	112	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	103	107	67-124	4
2-Chlorotoluene	ug/L (ppb)	50	101	105	77-127	4
4-Chlorotoluene	ug/L (ppb)	50	102	106	78-128	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	106	79-122	1
1,3-Dichlorobenzene	ug/L (ppb)	50	100	101	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	50	98	100	83-107	2
1,2-Dichlorobenzene	ug/L (ppb)	50	98	98	84-112	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	116	112	57-141	4
Hexachlorobutadiene	ug/L (ppb)	50	101	96	53-141	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	96	65-136	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

Laboratory Code: 002417-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	77	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	86	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	81	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	90	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	83	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	85	32-124
Fluoranthene	mg/kg (ppm)	0.17	0.023	96	16-160
Pyrene	mg/kg (ppm)	0.17	0.021	94	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	0.011	92	23-144
Chrysene	mg/kg (ppm)	0.17	0.014	85	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.014	83	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	76	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	0.0097	89	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	75	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	72	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	63	37-133

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCS/D	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	85	84	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	93	90	54-121	3
Acenaphthene	mg/kg (ppm)	0.17	90	89	54-123	1
Fluorene	mg/kg (ppm)	0.17	101	95	56-127	6
Phenanthrene	mg/kg (ppm)	0.17	90	92	55-122	2
Anthracene	mg/kg (ppm)	0.17	87	87	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	92	90	54-129	2
Pyrene	mg/kg (ppm)	0.17	97	96	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	93	90	51-115	3
Chrysene	mg/kg (ppm)	0.17	96	93	55-129	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	82	80	56-123	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	83	85	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	79	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	73	84	49-148	14
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	72	82	50-141	13
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	70	79	52-131	12

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/13/20

Date Received: 02/28/20

Project: MMB, F&BI 002445

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

Laboratory Code: 002445-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	73	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	82	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	78	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	82	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	80	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	81	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	89	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	90	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	86	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	83	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	77	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	77	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	84	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	59	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	55	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	47	37-133

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)	0.17	85	84	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	94	91	54-121	3
Acenaphthene	mg/kg (ppm)	0.17	91	89	54-123	2
Fluorene	mg/kg (ppm)	0.17	93	94	56-127	1
Phenanthrene	mg/kg (ppm)	0.17	91	91	55-122	0
Anthracene	mg/kg (ppm)	0.17	87	86	50-120	1
Fluoranthene	mg/kg (ppm)	0.17	96	96	54-129	0
Pyrene	mg/kg (ppm)	0.17	94	92	53-127	2
Benz(a)anthracene	mg/kg (ppm)	0.17	93	94	51-115	1
Chrysene	mg/kg (ppm)	0.17	97	96	55-129	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	81	80	56-123	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	84	82	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	80	80	51-118	0
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	83	84	49-148	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	84	84	50-141	0
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	78	78	52-131	0

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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 Custody Record 002445

Samples Shipped to: F#B

**HART CROWSER** ME 02/28/20

1 OFX 8 4 MG  
BD  
VSS/VW/2/BIY

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940904</u>	LAB NUMBER _____	REQUESTED ANALYSIS	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>MMB</u>		NUTPH-DX NUTPH-6X HINDS + BTEX METALS PATHS		
HART CROWSER CONTACT <u>M. Goodman</u>				
SAMPLED BY: <u>B. Dozier</u>				

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	NUTPH-DX	NUTPH-6X	HINDS + BTEX	METALS	PATHS	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/COMPOSITING INSTRUCTIONS
01 A-E	MBB4-5		2/27/20	0835	soil	X	X	X	X	X	5	
02	MBB4-10			0845		X	X	X	X	X		
03	MBB4-10ce			0846		X	X	X	X	X		
04	MBB4-15			0853		X	X	X	X	X		
05	MBB4-20			0910		X	X	X	X	X		
06	MBB4-25			0915		X	X	X	X	X		
07	MBB4-30			0930		X	X	X	X	X		Hold for analysis
08	MBB3-5			1015		X	X	X	X	X		
09	MBB3-10			1025		X	X	X	X	X		
10	MBB3-15			1045		X	X	X	X	X		
11	MBB3-12			1035								Hold for analysis
12	MBB3-20			1050		X	X	X	X	X		

RELINQUISHED BY <u>M. Goodman</u>	DATE 2/28/20	RECEIVED BY <u>[Signature]</u>	DATE 2/28/20	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  Samples received at <u>4</u> °C	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>M. Goodman</u>	TIME 0900	SIGNATURE <u>[Signature]</u>	TIME 9:30	COOLER NO.: _____ STORAGE LOCATION: _____  See Lab Work Order No. _____ for Other Contract Requirements	SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
PRINT NAME <u>M. Goodman</u>		PRINT NAME <u>[Signature]</u>			
COMPANY <u>Hart Crowser</u>		COMPANY <u>F#B</u>			
RELINQUISHED BY	DATE	RECEIVED BY	DATE		
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

# Sample Custody Record 002445

Samples Shipped to: F&B



**HARTCROWSER**

2 of \*BD 4 MG  
ME 02/28/20

V53/VWZ/RY Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1d46904</u> LAB NUMBER _____ PROJECT NAME <u>MMB</u> HART CROWSER CONTACT <u>M. Goodman</u> <u>B. Dozier</u> SAMPLED BY: <u>B. Dozier</u>	REQUESTED ANALYSIS NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
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LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	NO. OF CONTAINERS
13 A-E	MBB-3-75		2/17/20	655	Soil	5
14	MBB3-30			1105		Hold for analysis
15	MBB3-35			1110		
16	MBB3-40			1130		
17	MBB2-5			1355		
18	MBB2-10			1400		Hold for analysis
19	MBB2-15			1405		
20	MBB2-20			1415		
21	MBB2-20a			1416		
22	MBB2-25			1425		Sample ID MMB2-20a
23	MBB2-30			1435		
24	MBB1-5			1510		

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS
<u>M. Goodman</u>	2/28/20	<u>B. Dozier</u>	2/28/20	Samples received at <u>400</u>	SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
PRINT NAME <u>Hart Crowser</u>	TIME 0900	PRINT NAME <u>F&amp;B</u>	TIME 9:30		
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:	STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME	See Lab Work Order No. _____	TURNAROUND TIME:
PRINT NAME		PRINT NAME		for Other Contract Requirements	<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS <input type="checkbox"/> OTHER _____
COMPANY		COMPANY			

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

# Sample Custody Record

Samples Shipped to: F&B

002445



**HART CROWSER**

ME 02/28/20 3 of 4 BD 4 MG

USS/VWZ/BIU

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

JOB <u>1940904</u> LAB NUMBER _____						REQUESTED ANALYSIS										NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS		
PROJECT NAME <u>MMB</u>						NWTPH-Dx	NWTPH-Gx	HUNGs + BTEX - 8260	MICA METALS	PPTS									
HART CROWSER CONTACT <u>M. Goodman</u>																			
SAMPLED BY: <u>B. Dozier + A. Nakahara + J. Barchette</u>																			
LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX														
25A-E	MBB1-10		2/27/20	1520	soil	X	X	X	X	X									5
26	MBB1-15			1530		X	X	X	X	X									
27	MBB1-20			1535		X	X	X	X	X									
28	MBB1-25			1545		X	X	X	X	X									
29	MBB1-30			1555															Hold for analysis
30	HMW-9D-5			0830		X	X	X	X										
31	HMW-9D-10			0917		X	X	X	X										
32	HMW-9D-15			0920		X	X	X	X										
33	HMW-9D-20			0925		X	X	X	X										
34	HMW-9D-25			0927		X	X	X	X										
35A-G	MBB-8-GW			1230	water		X	X	X										7 hold TPT for analysis
36A-G	MBB-10-GW			1700		X	X	X	X										7

RELINQUISHED BY <u>MS</u>	DATE <u>2/28/20</u>	RECEIVED BY <u>[Signature]</u>	DATE <u>2/28/20</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  Samples received at <u>4</u> °C	TOTAL NUMBER OF CONTAINERS	
SIGNATURE <u>M. Goodman</u>	TIME <u>0900</u>	SIGNATURE <u>[Signature]</u>	TIME <u>9:30</u>		SAMPLE RECEIPT INFORMATION CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A GOOD CONDITION <input type="checkbox"/> YES <input type="checkbox"/> NO TEMPERATURE _____ SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT	
PRINT NAME <u>M. Goodman</u>		PRINT NAME <u>F&amp;B</u>				
COMPANY <u>Hart Crowser</u>		COMPANY <u>F&amp;B</u>				
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.:		STORAGE LOCATION:
SIGNATURE	TIME	SIGNATURE	TIME			<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK
PRINT NAME		PRINT NAME		See Lab Work Order No. _____		<input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD
COMPANY		COMPANY		for Other Contract Requirements		<input type="checkbox"/> 72 HOURS    OTHER _____

# Sample Custody Record

002445



5 of 5  
4 of 4 MG

VSS/VW2/ ~~A/B~~/BI  
Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: FAB

JOB <u>1940904</u>	LAB NUMBER _____	REQUESTED ANALYSIS NWTPH-Dx NWTPH-GTx HVOCs 28260 BTEX MTCAS-Metals	NO. OF CONTAINERS	OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>601/615 Dexter (Mercer Mega Block)</u>	HART CROWSER CONTACT <u>Marissa Goodman</u>			
SAMPLED BY: <u>Coire McCabe</u>				

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX															
37A E	DMW-3IA-5		2/27/20	10:18	Soil	X	X	X	X	X										5
38	DMW-3IA-10			10:34		X	X	X	X	X										5
39	DMW-3IA-15			10:44		X	X	X	X	X										5
40	DMW-3IA-20			10:54		X	X	X	X	X										5
41	DMW-3IA-25			11:07		X	X	X	X	X										5
42A B	Trip Blank-0227 (1)							X	X											2
43A B	Trip Blank-0227 (2)							X	X											2

RELINQUISHED BY <u>Marissa Goodman</u>	DATE <u>2/28/20</u>	RECEIVED BY <u>Eric Van</u>	DATE <u>2/28/20</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:  Samples received at <u>4</u> °C	TOTAL NUMBER OF CONTAINERS
SIGNATURE <u>Marissa Goodman</u>	TIME <u>0900</u>	SIGNATURE <u>Eric Van</u>	TIME <u>0930</u>		SAMPLE RECEIPT INFORMATION
PRINT NAME <u>Marissa Goodman</u>		PRINT NAME <u>Eric Van</u>			CUSTODY SEALS: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A
COMPANY <u>Hart Crowser</u>		COMPANY <u>FAB</u>			GOOD CONDITION: <input type="checkbox"/> YES <input type="checkbox"/> NO
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: _____ STORAGE LOCATION: _____	TEMPERATURE _____
SIGNATURE	TIME	SIGNATURE	TIME		SHIPMENT METHOD: <input type="checkbox"/> HAND <input type="checkbox"/> COURIER <input type="checkbox"/> OVERNIGHT
PRINT NAME		PRINT NAME			TURNAROUND TIME:
COMPANY		COMPANY			<input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS OTHER _____

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

March 26, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the results from the testing of material submitted on March 18, 2020 from the MMB, F&BI 003307 project. There are 22 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: Becca Dozier  
HCR0326R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 18, 2020 by Friedman & Bruya, Inc. from the Hart Crowser MMB, F&BI 003307 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
003307 -01	DMW-1S
003307 -02	DMW-2S
003307 -03	DMW-200S
003307 -04	DMW-3IA
003307 -05	DMW-6
003307 -06	Tripblank0318

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20  
Date Received: 03/18/20  
Project: MMB, F&BI 003307  
Date Extracted: 03/20/20  
Date Analyzed: 03/20/20 and 03/21/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
DMW-1S 003307-01	1,800	62
DMW-2S 003307-02	<100	94
DMW-200S 003307-03	<100	97
DMW-3IA 003307-04	<100	99
DMW-6 003307-05	<100	95
Method Blank 00-651 MB	<100	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20  
Date Received: 03/18/20  
Project: MMB, F&BI 003307  
Date Extracted: 03/19/20  
Date Analyzed: 03/19/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 41-152)
DMW-1S 003307-01	580 x	<250	97
DMW-2S 003307-02	<50	<250	102
DMW-200S 003307-03	<50	<250	92
DMW-3IA 003307-04	<50	<250	97
DMW-6 003307-05	<50	<250	111
Method Blank 00-700 MB2	<50	<250	105

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-1S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-01
Date Analyzed:	03/19/20	Data File:	003307-01.081
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	12.0
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-2S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-02
Date Analyzed:	03/19/20	Data File:	003307-02.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.40
Cadmium	<1
Chromium	2.03
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-200S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-03
Date Analyzed:	03/19/20	Data File:	003307-03.109
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	1.50
Cadmium	<1
Chromium	1.96
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-3IA	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-04
Date Analyzed:	03/19/20	Data File:	003307-04.110
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.25
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-6	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-05
Date Analyzed:	03/19/20	Data File:	003307-05.111
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	3.21
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	I0-169 mb
Date Analyzed:	03/19/20	Data File:	I0-169 mb.073
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-1S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-01
Date Analyzed:	03/23/20	Data File:	032324.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	12
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	0.73
1,1-Dichloroethane	<0.2	o-Xylene	1.1
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	0.44
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	2.9	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	1.6	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-2S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-02
Date Analyzed:	03/23/20	Data File:	032325.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-200S	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-03
Date Analyzed:	03/23/20	Data File:	032326.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	0.26	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-3IA	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-04
Date Analyzed:	03/23/20	Data File:	032327.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	0.39
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-6	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-05
Date Analyzed:	03/23/20	Data File:	032328.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Tripblank0318	Client:	Hart Crowser
Date Received:	03/18/20	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	003307-06
Date Analyzed:	03/23/20	Data File:	032323.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	MMB, F&BI 003307
Date Extracted:	03/19/20	Lab ID:	00-696 mb
Date Analyzed:	03/20/20	Data File:	032014.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20

Date Received: 03/18/20

Project: MMB, F&BI 003307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 003307-02 (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	102	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20

Date Received: 03/18/20

Project: MMB, F&BI 003307

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	63-142	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20  
 Date Received: 03/18/20  
 Project: MMB, F&BI 003307

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

Laboratory Code: 003305-04 (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	86	87	70-130	1
Cadmium	ug/L (ppb)	5	<1	103	103	70-130	0
Chromium	ug/L (ppb)	20	<1	97	96	70-130	1
Lead	ug/L (ppb)	10	<1	90	90	70-130	0
Mercury	ug/L (ppb)	5	<1	92	94	70-130	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	87	85-115
Cadmium	ug/L (ppb)	5	104	85-115
Chromium	ug/L (ppb)	20	98	85-115
Lead	ug/L (ppb)	10	92	85-115
Mercury	ug/L (ppb)	5	94	85-115

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20

Date Received: 03/18/20

Project: MMB, F&BI 003307

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

Laboratory Code: 003307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chloromethane	ug/L (ppb)	50	<2	119	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	125	36-166
Chloroethane	ug/L (ppb)	50	<0.2	112	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<0.2	105	44-165
1,1-Dichloroethene	ug/L (ppb)	50	<0.2	106	60-136
Methylene chloride	ug/L (ppb)	50	<5	98	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.2	94	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<0.2	96	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<0.2	101	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.2	92	71-127
Chloroform	ug/L (ppb)	50	<0.2	94	65-132
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	97	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<0.2	87	69-133
Carbon tetrachloride	ug/L (ppb)	50	<0.2	104	56-152
Benzene	ug/L (ppb)	50	2.9	91	76-125
Trichloroethene	ug/L (ppb)	50	<0.2	86	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<0.2	94	78-125
Bromodichloromethane	ug/L (ppb)	50	<0.2	96	61-150
Toluene	ug/L (ppb)	50	1.6	93	76-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.2	103	68-131
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	88	71-128
Tetrachloroethene	ug/L (ppb)	50	<0.2	88	10-226
Dibromochloromethane	ug/L (ppb)	50	<0.2	106	70-139
Chlorobenzene	ug/L (ppb)	50	<0.2	91	77-122
Ethylbenzene	ug/L (ppb)	50	12	121 b	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.2	111	73-137
m,p-Xylene	ug/L (ppb)	100	0.73	95	69-135
o-Xylene	ug/L (ppb)	50	1.1	101	60-140
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.2	103	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.03	93	53-150
2-Chlorotoluene	ug/L (ppb)	50	<0.2	92	66-127
4-Chlorotoluene	ug/L (ppb)	50	<0.2	92	65-130
1,2,4-Trimethylbenzene	ug/L (ppb)	50	0.44	96	59-146
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.2	96	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.2	93	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.2	97	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.8	127	32-164
Hexachlorobutadiene	ug/L (ppb)	50	<0.2	97	60-143
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.2	100	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/26/20

Date Received: 03/18/20

Project: MMB, F&BI 003307

**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 LCS D	Acceptance Criteria	RPD (Limit 20)
Chloromethane	ug/L (ppb)	50	110	113	45-156	3
Vinyl chloride	ug/L (ppb)	50	112	117	50-154	4
Chloroethane	ug/L (ppb)	50	105	118	58-146	12
Trichlorofluoromethane	ug/L (ppb)	250	104	109	50-150	5
1,1-Dichloroethene	ug/L (ppb)	50	108	114	67-136	5
Methylene chloride	ug/L (ppb)	50	100	106	39-148	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	97	102	68-128	5
1,1-Dichloroethane	ug/L (ppb)	50	102	105	79-121	3
2,2-Dichloropropane	ug/L (ppb)	50	103	105	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	98	101	80-123	3
Chloroform	ug/L (ppb)	50	101	103	80-121	2
1,1,1-Trichloroethane	ug/L (ppb)	50	101	107	81-125	6
1,1-Dichloropropene	ug/L (ppb)	50	100	98	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	108	115	75-158	6
Benzene	ug/L (ppb)	50	99	97	69-134	2
Trichloroethene	ug/L (ppb)	50	99	97	79-113	2
1,2-Dichloropropane	ug/L (ppb)	50	107	103	77-123	4
Bromodichloromethane	ug/L (ppb)	50	111	107	81-133	4
Toluene	ug/L (ppb)	50	103	103	72-122	0
1,1,2-Trichloroethane	ug/L (ppb)	50	113	110	75-124	3
1,3-Dichloropropane	ug/L (ppb)	50	109	101	76-126	8
Tetrachloroethene	ug/L (ppb)	50	104	101	76-121	3
Dibromochloromethane	ug/L (ppb)	50	126	122	84-133	3
Chlorobenzene	ug/L (ppb)	50	105	103	83-114	2
Ethylbenzene	ug/L (ppb)	50	106	106	77-124	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	114	120	84-127	5
m,p-Xylene	ug/L (ppb)	100	105	104	81-112	1
o-Xylene	ug/L (ppb)	50	104	107	81-121	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	117	114	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	111	108	67-124	3
2-Chlorotoluene	ug/L (ppb)	50	107	104	77-127	3
4-Chlorotoluene	ug/L (ppb)	50	111	104	78-128	7
1,2,4-Trimethylbenzene	ug/L (ppb)	50	108	105	79-122	3
1,3-Dichlorobenzene	ug/L (ppb)	50	109	105	83-113	4
1,4-Dichlorobenzene	ug/L (ppb)	50	107	103	83-107	4
1,2-Dichlorobenzene	ug/L (ppb)	50	107	105	84-112	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	118	126	57-141	7
Hexachlorobutadiene	ug/L (ppb)	50	100	97	53-141	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	105	104	65-136	1

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

1003307

# Sample Custody Record



ME 03/18/20

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: \_\_\_\_\_

## HARTCROWSER

JOB <u>1940904</u>	LAB NUMBER _____	REQUESTED ANALYSIS NUTPH-6X NUTPH-DX HVOCS + BTEX (G) PAHs MTCA Metals - TOX MTCA Metals - DBS	NO. OF CONTAINERS	<u>ALS/VW3/BOS</u>  OBSERVATIONS/COMMENTS/ COMPOSITING INSTRUCTIONS
PROJECT NAME <u>MMB</u>				
HART CROWSER CONTACT <u>M. Goodman + B. Dozier</u>				
SAMPLED BY: <u>B. Lythe + B. Dozier</u>				

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX													
01	A-G	DMW-15	3/18/20	0945	H <sub>2</sub> O	X	X	X	X									7
02		DMW-25		1152	L	X	X	X	X									7
03		DMW-2005		1157	L	X	X	X	X									7
04		DMW-3IA		1237	L	X	X	X	X									7
05	V	DMW-6		0956	L	X	X	X	X									7
06	AB	Tripbenk0318						X										2

Samples received at 3 <sup>00</sup>

RELINQUISHED BY <u>[Signature]</u>	DATE <u>3/18</u>	RECEIVED BY <u>BISRA TADES</u>	DATE <u>3/18</u>	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS <u>37</u>
SIGNATURE <u>Andrew Stakhan</u>	TIME <u>1832</u>	SIGNATURE <u>[Signature]</u>	TIME <u>1832</u>		
PRINT NAME <u>HC</u>		PRINT NAME <u>BISRA TADES</u>			
COMPANY <u>1832</u>		COMPANY <u>FBI</u>			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: _____ STORAGE LOCATION: _____	TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

White to Lab    Yellow to Project Manager    Pink to Sample Custodian

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

January 26, 2021

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the amended results from the testing of material submitted on March 20, 2020 from the 1940904 MMB, F&BI 003357 project. The case narrative was updated.

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: Becca Dozier  
HCR0330R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
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Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
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fbi@isomedia.com  
www.friedmanandbruya.com

March 30, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman :

Included are the results from the testing of material submitted on March 20, 2020 from the 1940904 MMB, F&BI 003357 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: Becca Dozier  
HCR0330R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 20, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904 MMB, F&BI 003357 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
003357 -01	HMW-9IB
003357 -02	HMW-9IA
003357 -03	DMW-5IA
003357 -04	DMW-4S
003357 -05	Tripblank03

The NWTPH-Dx detection in DMW-51A is due to a pattern of peaks inconsistent with a standard diesel fuel pattern. The data were qualified accordingly.

The NWTPH-Gx detection in HMW-9IB is due to individual peaks inconsistent with a standard gasoline pattern. The detection is likely due to the individual VOCs identified in the 8260D analysis.

The dissolved metals sample DMW-51A was filtered at Friedman and Bruya on March 23, 2020 at 15:45.

Several 8260D compounds failed below 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.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20  
Date Received: 03/20/20  
Project: 1940904 MMB, F&BI 003357  
Date Extracted: 03/20/20  
Date Analyzed: 03/27/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD NWTPH-Gx**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
HMW-9IB 003357-01	580 x	102
HMW-9IA 003357-02	<100	96
DMW-5IA 003357-03	<100	98
DMW-4S 003357-04	670	112
Method Blank 00-651 MB	<100	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20  
Date Received: 03/20/20  
Project: 1940904 MMB, F&BI 003357  
Date Extracted: 03/23/20  
Date Analyzed: 03/23/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 41-152)
HMW-9IB 003357-01	60 x	<250	113
HMW-9IA 003357-02	<50	<250	108
DMW-5IA 003357-03	760 x	<250	120
DMW-4S 003357-04	790 x	<250	90
Method Blank 00-736 MB	<50	<250	108

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DMW-5IA f	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/27/20	Lab ID:	003357-03
Date Analyzed:	03/27/20	Data File:	003357-03.040
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	9.21
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Hart Crowser
Date Received:	NA	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/27/20	Lab ID:	I0-187 mb
Date Analyzed:	03/27/20	Data File:	I0-187 mb.038
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-9IB	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/25/20	Lab ID:	003357-01
Date Analyzed:	03/25/20	Data File:	003357-01.064
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	2.07
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	HMW-91A	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/25/20	Lab ID:	003357-02
Date Analyzed:	03/25/20	Data File:	003357-02.065
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	3.00
Cadmium	<1
Chromium	3.63
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-5IA	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/25/20	Lab ID:	003357-03
Date Analyzed:	03/25/20	Data File:	003357-03.068
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	8.56
Cadmium	<1
Chromium	8.70
Lead	1.09
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DMW-4S	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/25/20	Lab ID:	003357-04
Date Analyzed:	03/25/20	Data File:	003357-04.069
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	6.76
Cadmium	<1
Chromium	1.74
Lead	<1
Mercury	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Hart Crowser
Date Received:	NA	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/25/20	Lab ID:	I0-179 mb
Date Analyzed:	03/25/20	Data File:	I0-179 mb.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HMW-9IB	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-01
Date Analyzed:	03/24/20	Data File:	032446.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	1,800 ve	Tetrachloroethene	730 ve
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	13	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	8.3	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	4,300 ve	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	430 ve	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	0.23	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HMW-9IB	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-01 1/100
Date Analyzed:	03/25/20	Data File:	032519.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<200	1,3-Dichloropropane	<20
Vinyl chloride	1,900	Tetrachloroethene	660
Chloroethane	<20 j	Dibromochloromethane	<20
Trichlorofluoromethane	<20 j	Chlorobenzene	<20
1,1-Dichloroethene	<20	Ethylbenzene	<20
Methylene chloride	<500	1,1,1,2-Tetrachloroethane	<20
trans-1,2-Dichloroethene	<20	m,p-Xylene	<40
1,1-Dichloroethane	<20	o-Xylene	<20
2,2-Dichloropropane	<20	1,1,2,2-Tetrachloroethane	<20
cis-1,2-Dichloroethene	9,100	1,2,3-Trichloropropane	<4 j
Chloroform	<20	2-Chlorotoluene	<20
1,1,1-Trichloroethane	<20	4-Chlorotoluene	<20
1,1-Dichloropropene	<20	1,2,4-Trimethylbenzene	<20
Carbon tetrachloride	<20	1,3-Dichlorobenzene	<20
Benzene	<20	1,4-Dichlorobenzene	<20
Trichloroethene	420	1,2-Dichlorobenzene	<20
1,2-Dichloropropane	<20	1,2-Dibromo-3-chloropropane	<80 j
Bromodichloromethane	<20	Hexachlorobutadiene	<20
Toluene	<20	1,2,3-Trichlorobenzene	<20
1,1,2-Trichloroethane	<20		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	HMW-9IA	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-02
Date Analyzed:	03/24/20	Data File:	032421.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	89	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	0.95	Tetrachloroethene	0.42
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	3.7	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	0.23	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-5IA	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-03
Date Analyzed:	03/24/20	Data File:	032422.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	0.64	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	DMW-4S	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-04
Date Analyzed:	03/24/20	Data File:	032423.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	5.5
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	2.3
1,1-Dichloroethane	<0.2	o-Xylene	0.65
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	7.1
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	0.26	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Tripblank03	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	003357-05
Date Analyzed:	03/24/20	Data File:	032424.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	107	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/20/20	Lab ID:	00-711 mb
Date Analyzed:	03/20/20	Data File:	032039.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Chloromethane	<2	1,3-Dichloropropane	<0.2
Vinyl chloride	<0.2	Tetrachloroethene	<0.2
Chloroethane	<0.2 j	Dibromochloromethane	<0.2
Trichlorofluoromethane	<0.2 j	Chlorobenzene	<0.2
1,1-Dichloroethene	<0.2	Ethylbenzene	<0.2
Methylene chloride	<5	1,1,1,2-Tetrachloroethane	<0.2
trans-1,2-Dichloroethene	<0.2	m,p-Xylene	<0.4
1,1-Dichloroethane	<0.2	o-Xylene	<0.2
2,2-Dichloropropane	<0.2	1,1,2,2-Tetrachloroethane	<0.2
cis-1,2-Dichloroethene	<0.2	1,2,3-Trichloropropane	<0.04 j
Chloroform	<0.2	2-Chlorotoluene	<0.2
1,1,1-Trichloroethane	<0.2	4-Chlorotoluene	<0.2
1,1-Dichloropropene	<0.2	1,2,4-Trimethylbenzene	<0.2
Carbon tetrachloride	<0.2	1,3-Dichlorobenzene	<0.2
Benzene	<0.2	1,4-Dichlorobenzene	<0.2
Trichloroethene	<0.2	1,2-Dichlorobenzene	<0.2
1,2-Dichloropropane	<0.2	1,2-Dibromo-3-chloropropane	<0.8 j
Bromodichloromethane	<0.2	Hexachlorobutadiene	<0.2
Toluene	<0.2	1,2,3-Trichlorobenzene	<0.2
1,1,2-Trichloroethane	<0.2		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	DMW-4S	Client:	Hart Crowser
Date Received:	03/20/20	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/23/20	Lab ID:	003357-04 1/2
Date Analyzed:	03/25/20	Data File:	032507.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	81	31	160
Benzo(a)anthracene-d12	97	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
Acenaphthylene	<0.04
Acenaphthene	<0.04
Fluorene	<0.04
Phenanthrene	<0.04
Anthracene	<0.04
Fluoranthene	<0.04
Pyrene	<0.04
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
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	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904 MMB, F&BI 003357
Date Extracted:	03/23/20	Lab ID:	00-737 mb
Date Analyzed:	03/23/20	Data File:	032315.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	113	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TPH AS GASOLINE  
USING METHOD NWTPH-G<sub>x</sub>**

Laboratory Code: 003307-02 (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	102	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	120	112	63-142	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

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

Laboratory Code: 003357-03 (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	9.21	99	96	75-125	3
Cadmium	ug/L (ppb)	5	<1	98	97	75-125	1
Chromium	ug/L (ppb)	20	<1	105	106	75-125	1
Lead	ug/L (ppb)	10	<1	97	95	75-125	2
Mercury	ug/L (ppb)	5	<1	97	98	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Cadmium	ug/L (ppb)	5	99	80-120
Chromium	ug/L (ppb)	20	100	80-120
Lead	ug/L (ppb)	10	95	80-120
Mercury	ug/L (ppb)	5	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

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

Laboratory Code: 003372-06 (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	1.03	100	105	75-125	5
Cadmium	ug/L (ppb)	5	<1	97	98	75-125	1
Chromium	ug/L (ppb)	20	<1	86	85	75-125	1
Lead	ug/L (ppb)	10	<1	92	94	75-125	2
Mercury	ug/L (ppb)	5	<1	95	99	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	93	80-120
Cadmium	ug/L (ppb)	5	98	80-120
Chromium	ug/L (ppb)	20	96	80-120
Lead	ug/L (ppb)	10	94	80-120
Mercury	ug/L (ppb)	5	95	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

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

Laboratory Code: 003356-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Chloromethane	ug/L (ppb)	50	<10	100	57-129
Vinyl chloride	ug/L (ppb)	50	<0.2	102	61-139
Chloroethane	ug/L (ppb)	50	<1	100	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	101	65-137
1,1-Dichloroethene	ug/L (ppb)	50	<1	101	71-123
Methylene chloride	ug/L (ppb)	50	<5	95	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	98	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	32 vo	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.9	102	63-126
Chloroform	ug/L (ppb)	50	2.0	102	77-117
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	105	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	97	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	102	70-132
Benzene	ug/L (ppb)	50	<0.35	95	75-114
Trichloroethene	ug/L (ppb)	50	2.3	94	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	98	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	99	78-117
Toluene	ug/L (ppb)	50	<1	91	73-117
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	98	81-116
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	80-113
Tetrachloroethene	ug/L (ppb)	50	8.8	93	40-155
Dibromochloromethane	ug/L (ppb)	50	<1	99	69-129
Chlorobenzene	ug/L (ppb)	50	<1	89	75-115
Ethylbenzene	ug/L (ppb)	50	<1	17 vo	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	103	76-130
m,p-Xylene	ug/L (ppb)	100	<2	97	63-128
o-Xylene	ug/L (ppb)	50	<1	103	64-129
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	77-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	99	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	96	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	92	76-122
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	96	59-136
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	92	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	91	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	95	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	100	69-129
Hexachlorobutadiene	ug/L (ppb)	50	<1	82	53-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	59-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

**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)	50	99	96	62-130	3
Vinyl chloride	ug/L (ppb)	50	102	100	70-128	2
Chloroethane	ug/L (ppb)	50	101	97	66-149	4
Trichlorofluoromethane	ug/L (ppb)	50	104	100	65-138	4
1,1-Dichloroethene	ug/L (ppb)	50	105	102	72-121	3
Methylene chloride	ug/L (ppb)	50	97	93	63-132	4
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	100	76-118	3
1,1-Dichloroethane	ug/L (ppb)	50	104	102	77-119	2
2,2-Dichloropropane	ug/L (ppb)	50	95	91	62-141	4
cis-1,2-Dichloroethene	ug/L (ppb)	50	104	103	76-119	1
Chloroform	ug/L (ppb)	50	102	101	78-117	1
1,1,1-Trichloroethane	ug/L (ppb)	50	106	103	80-116	3
1,1-Dichloropropene	ug/L (ppb)	50	100	100	78-119	0
Carbon tetrachloride	ug/L (ppb)	50	104	101	72-128	3
Benzene	ug/L (ppb)	50	97	98	75-116	1
Trichloroethene	ug/L (ppb)	50	95	97	72-119	2
1,2-Dichloropropane	ug/L (ppb)	50	100	101	79-121	1
Bromodichloromethane	ug/L (ppb)	50	101	101	76-120	0
Toluene	ug/L (ppb)	50	100	100	79-115	0
1,1,2-Trichloroethane	ug/L (ppb)	50	99	102	78-120	3
1,3-Dichloropropane	ug/L (ppb)	50	97	100	81-111	3
Tetrachloroethene	ug/L (ppb)	50	99	101	78-109	2
Dibromochloromethane	ug/L (ppb)	50	105	106	63-140	1
Chlorobenzene	ug/L (ppb)	50	97	98	80-113	1
Ethylbenzene	ug/L (ppb)	50	102	102	83-111	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	108	106	76-125	2
m,p-Xylene	ug/L (ppb)	100	103	104	81-112	1
o-Xylene	ug/L (ppb)	50	107	108	81-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	100	102	79-118	2
1,2,3-Trichloropropane	ug/L (ppb)	50	99	98	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	103	101	79-112	2
4-Chlorotoluene	ug/L (ppb)	50	99	98	80-116	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	105	81-121	0
1,3-Dichlorobenzene	ug/L (ppb)	50	98	97	80-115	1
1,4-Dichlorobenzene	ug/L (ppb)	50	96	97	77-112	1
1,2-Dichlorobenzene	ug/L (ppb)	50	99	98	79-115	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	102	103	62-133	1
Hexachlorobutadiene	ug/L (ppb)	50	99	99	70-116	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	102	74-122	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/30/20

Date Received: 03/20/20

Project: 1940904 MMB, F&BI 003357

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR PAHS BY EPA METHOD 8270E SIM**

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)	1	76	77	57-114	1
Acenaphthylene	ug/L (ppb)	1	82	82	65-119	0
Acenaphthene	ug/L (ppb)	1	81	82	66-118	1
Fluorene	ug/L (ppb)	1	87	87	64-125	0
Phenanthrene	ug/L (ppb)	1	84	85	67-120	1
Anthracene	ug/L (ppb)	1	88	89	65-122	1
Fluoranthene	ug/L (ppb)	1	93	95	65-127	2
Pyrene	ug/L (ppb)	1	90	92	62-130	2
Benz(a)anthracene	ug/L (ppb)	1	93	96	60-118	3
Chrysene	ug/L (ppb)	1	89	92	66-125	3
Benzo(b)fluoranthene	ug/L (ppb)	1	79	81	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	80	83	62-125	4
Benzo(a)pyrene	ug/L (ppb)	1	86	87	58-127	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	89	91	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	1	83	86	37-133	4
Benzo(g,h,i)perylene	ug/L (ppb)	1	84	87	34-135	4

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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 Custody Record



**HARTCROWSER**

ME 03-20-20

Hart Crowser, Inc.  
3131 Elliott Avenue, Suite 600  
Seattle, Washington 98121  
Office: 206.324.9530 • Fax 206.328.5581

Samples Shipped to: 003357

JOB 1940904 LAB NUMBER                     

PROJECT NAME MMB

HART CROWSER CONTACT M. Goodman + B. Dozier

SAMPLED BY: J. Higgins + B. Lytle

REQUIRED ANALYSIS

NO. OF CONTAINERS 7

OBSERVATIONS/COMMENTS/COMPOSING INSTRUCTIONS  
UW3 AIG B05

LAB NO.	SAMPLE ID	DESCRIPTION	DATE	TIME	MATRIX	NUTPH-6x	NUTPH-Dx	HVOs HDEX (B05)	PAHS	MICA Metals - 10	MICA Metals - 100	NO. OF CONTAINERS
01 A-G	HMW-9IB		3/19/20	1322	H <sub>2</sub> O	X	X	X		X		7
02	HMW-9IA			1651	I	X	X	X		X		7
03	DMW-5IA			1800	I	X	X	X		X	X	7
04 A-H	DMW-4S			1558	I	X	X	X	X	X		8
05 A-B	Tripblan K03				I			X				2

Lab filter for diss. Metals

Samples received at 4 °C

3 BD

RELINQUISHED BY	DATE	RECEIVED BY	DATE	SPECIAL SHIPMENT HANDLING OR STORAGE REQUIREMENTS:	TOTAL NUMBER OF CONTAINERS <u>31</u>
<u>Jolie Higgins</u>	<u>3/20/20</u>	<u>[Signature]</u>	<u>3/20/20</u>		
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME <u>Jolie Higgins</u>	<u>825</u>	PRINT NAME <u>[Signature]</u>	<u>1030</u>		
COMPANY <u>HC</u>		COMPANY <u>FAB</u>			
RELINQUISHED BY	DATE	RECEIVED BY	DATE	COOLER NO.: STORAGE LOCATION:	TURNAROUND TIME: <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 1 WEEK <input type="checkbox"/> 48 HOURS <input type="checkbox"/> STANDARD <input type="checkbox"/> 72 HOURS    OTHER _____
SIGNATURE	TIME	SIGNATURE	TIME		
PRINT NAME		PRINT NAME			
COMPANY		COMPANY			

See Lab Work Order No. \_\_\_\_\_  
for Other Contract Requirements

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

January 26, 2021

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman:

Included are the amended results from the testing of material submitted on October 15, 2020 from the 1940904, F&BI 010245 project. The case narrative was updated.

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: Mark Dagel  
HCR1019R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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fbi@isomedia.com  
www.friedmanandbruya.com

October 19, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman:

Included are the results from the testing of material submitted on October 15, 2020 from the 1940904, F&BI 010245 project. There are 6 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: Mark Dagel  
HCR1019R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 15, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010245 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

010245 -01

Hart Crowser

DMW-5IA

The NWTPH-Dx detection in DMW-5IA is due to individual peaks inconsistent with a standard diesel fuel pattern. The data were qualified accordingly.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/19/20  
Date Received: 10/15/20  
Project: 1940904, F&BI 010245  
Date Extracted: 10/15/20  
Date Analyzed: 10/15/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>  
Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 41-152)
DMW-5IA 010245-01	60 x	<250	103
Method Blank 00-2331 MB2	<50	<250	102

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/19/20  
Date Received: 10/15/20  
Project: 1940904, F&BI 010245  
Date Extracted: 10/15/20  
Date Analyzed: 10/15/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 47-140)
DMW-5IA 010245-01	100 x	<250	110
Method Blank 00-2331 MB2	<50	<250	104

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/19/20

Date Received: 10/15/20

Project: 1940904, F&BI 010245

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	108	63-142	20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/19/20

Date Received: 10/15/20

Project: 1940904, F&BI 010245

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	108	63-142	12

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

October 22, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman:

Included are the results from the testing of material submitted on October 19, 2020 from the 1940904, F&BI 010327 project. There are 26 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: Mark Dagel  
HCR1022R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 19, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010327 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010327 -01	DMW-10S-5
010327 -02	DMW-10S-10
010327 -03	DMW-10S-15
010327 -04	DMW-10S-20
010327 -05	DMW-10S-25
010327 -06	DMW-10S-30
010327 -07	DMW-10S-35
010327 -08	DMW-10S-40
010327 -09	DMW-10S-45
010327 -10	DMW-10S-50
010327 -11	DMW-10S-55
010327 -12	DMW-11S-5
010327 -13	DMW-11S-10
010327 -14	DMW-11S-15
010327 -15	DMW-11S-20
010327 -16	DMW-11S-25

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20  
 Date Received: 10/19/20  
 Project: 1940904, F&BI 010327  
 Date Extracted: 10/20/20  
 Date Analyzed: 10/21/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-10S-5 010327-01	<0.02	<0.02	<0.02	<0.06	<5	76
DMW-10S-10 010327-02	<0.02	<0.02	<0.02	<0.06	<5	78
DMW-10S-15 010327-03	<0.02	<0.02	<0.02	<0.06	<5	76
DMW-10S-20 010327-04	<0.02	<0.02	<0.02	<0.06	<5	77
DMW-10S-25 010327-05	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-10S-30 010327-06	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-10S-35 010327-07	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-10S-40 010327-08	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-10S-45 010327-09	<0.02	<0.02	<0.02	<0.06	<5	78
DMW-10S-50 010327-10	<0.02	<0.02	<0.02	<0.06	<5	69

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20  
 Date Received: 10/19/20  
 Project: 1940904, F&BI 010327  
 Date Extracted: 10/20/20  
 Date Analyzed: 10/21/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-10S-55 010327-11	<0.02	<0.02	<0.02	<0.06	<5	74
DMW-11S-5 010327-12	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-11S-10 010327-13	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-11S-15 010327-14	<0.02	<0.02	<0.02	<0.06	<5	77
DMW-11S-20 010327-15	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-11S-25 010327-16	<0.02	<0.02	<0.02	<0.06	<5	79
Method Blank 00-2301 MB	<0.02	<0.02	<0.02	<0.06	<5	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20  
Date Received: 10/19/20  
Project: 1940904, F&BI 010327  
Date Extracted: 10/20/20  
Date Analyzed: 10/20/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
DMW-10S-5 010327-01	<50	<250	91
DMW-10S-10 010327-02	<50	<250	84
DMW-10S-15 010327-03	<50	<250	89
DMW-10S-20 010327-04	<50	<250	91
DMW-10S-25 010327-05	<50	<250	85
DMW-10S-30 010327-06	<50	<250	92
DMW-10S-35 010327-07	<50	<250	80
DMW-10S-40 010327-08	<50	<250	86
DMW-10S-45 010327-09	<50	<250	84
DMW-10S-50 010327-10	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20  
Date Received: 10/19/20  
Project: 1940904, F&BI 010327  
Date Extracted: 10/20/20  
Date Analyzed: 10/20/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
DMW-10S-55 010327-11	<50	<250	90
DMW-11S-5 010327-12	<50	<250	92
DMW-11S-10 010327-13	<50	<250	90
DMW-11S-15 010327-14	<50	<250	84
DMW-11S-20 010327-15	<50	<250	83
DMW-11S-25 010327-16	<50	<250	85
Method Blank 00-2355 MB	<50	<250	84

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-5	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-01 1/6
Date Analyzed:	10/20/20	Data File:	102007.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-10	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-02 1/6
Date Analyzed:	10/20/20	Data File:	102010.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-15	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-03 1/6
Date Analyzed:	10/20/20	Data File:	102011.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-20	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-04 1/6
Date Analyzed:	10/20/20	Data File:	102012.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-25	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-05 1/6
Date Analyzed:	10/20/20	Data File:	102013.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-30	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-06 1/6
Date Analyzed:	10/20/20	Data File:	102014.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-35	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-07 1/6
Date Analyzed:	10/20/20	Data File:	102016.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	64	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-40	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-08 1/6
Date Analyzed:	10/20/20	Data File:	102017.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	66	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-45	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-09 1/6
Date Analyzed:	10/20/20	Data File:	102018.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-50	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-10 1/6
Date Analyzed:	10/20/20	Data File:	102019.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-10S-55	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-11 1/6
Date Analyzed:	10/20/20	Data File:	102020.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-5	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-12 1/6
Date Analyzed:	10/20/20	Data File:	102021.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-10	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-13 1/6
Date Analyzed:	10/20/20	Data File:	102022.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	72	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-15	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-14 1/6
Date Analyzed:	10/20/20	Data File:	102023.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-20	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-15 1/6
Date Analyzed:	10/20/20	Data File:	102024.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-25	Client:	Hart Crowser
Date Received:	10/19/20	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	010327-16 1/6
Date Analyzed:	10/20/20	Data File:	102025.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904, F&BI 010327
Date Extracted:	10/20/20	Lab ID:	00-2362 mb 1/6
Date Analyzed:	10/20/20	Data File:	102006.D
Matrix:	Soil	Instrument:	GC9
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	93	23	120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20

Date Received: 10/19/20

Project: 1940904, F&BI 010327

**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: 010327-01 (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)	0.5	80	69-120
Toluene	mg/kg (ppm)	0.5	82	70-117
Ethylbenzene	mg/kg (ppm)	0.5	80	65-123
Xylenes	mg/kg (ppm)	1.5	80	66-120
Gasoline	mg/kg (ppm)	20	80	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20

Date Received: 10/19/20

Project: 1940904, F&BI 010327

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010306-04 (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	<50	94	96	64-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	58-147

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/22/20

Date Received: 10/19/20

Project: 1940904, F&BI 010327

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES FOR  
POLYCHLORINATED BIPHENYLS AS  
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 010327-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	89	87	44-107	2
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	95	92	38-124	3

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	101	47-158
Aroclor 1260	mg/kg (ppm)	0.25	107	69-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.
- 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.

010327

MARK.DABEL@HARTCROWSON.COM

MARISSA.GOODMAN@HARTCROWSON.COM

Report To

Company Hart Crowson

Address 3131 GILLOT AVE #400

City, State, ZIP SEATTLE

Phone \_\_\_\_\_ Email \_\_\_\_\_

### SAMPLE CHAIN OF CUSTODY

ME

10-19-20

US5/DO3

Page # 1 of 2

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME	
<input type="checkbox"/> Standard turnaround	<input checked="" type="checkbox"/> RUSH <u>72 Hour</u>
Rush charges authorized by:	
SAMPLE DISPOSAL	
<input type="checkbox"/> Archive samples	<input type="checkbox"/> Other _____
Default: Dispose after 30 days	

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DMW-105-5	01 A-E	10/19/20	1120	SOIL	5	X	X	X										(X) - per BC
DMW-105-10	02	10/19/20	1127	SOIL	5	X	X	X										10/20/20 ME
DMW-105-15	03	10/19/20	1134	SOIL	5	X	X	X										
DMW-105-20	04	10/19/20	1143	SOIL	5	X	X	X										
DMW-105-25	05	10/19/20	1150	SOIL	5	X	X	X										
DMW-105-30	06	10/19/20	1208	SOIL	5	X	X	X										
DMW-105-35	07	10/19/20	1300	SOIL	5	X	X	X										
DMW-105-40	08	10/19/20	1315	SOIL	5	X	X	X										
DMW-105-45	09	10/19/20	1328	SOIL	5	X	X	X										Samples received at <u>4</u> °C
DMW-105-50	10	10/19/20	1352	SOIL	5	X	X	X										*

<sup>EWB</sup>  
 Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>BLAKE LYNE</u>	<u>Hart Crowson</u>	<u>10/19/20</u>	<u>1722</u>
Received by: <u>[Signature]</u>	<u>ERIC YOUNG</u>	<u>TRB</u>	<u>10/19/20</u>	<u>1722</u>
Relinquished by:				
Received by:				

010327 MARK.DAGG@HARTCROWSON.COM

MARISSA.LOOMANO@HARTCROWSON.COM

# SAMPLE CHAIN OF CUSTODY <sup>ME</sup>

10-19-20

VSS/D03

Page # 2 of 2

Report To \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <b>1940904</b>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME	
<input type="checkbox"/> Standard turnaround	<input checked="" type="checkbox"/> RUSH <u>72 HOUR</u>
Rush charges authorized by:	

SAMPLE DISPOSAL	
<input type="checkbox"/> Archive samples	<input type="checkbox"/> Other _____
Default: Dispose after 30 days	

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes				
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082								
DMW-105-55	11 A-E	10/19/20	1405	SOIL	5	X	X	X												
DMW-115-5	12	10/19/20	1610	SOIL	5	X	X	X												
DMW-115-10	13	10/19/20	1615	SOIL	5	X	X	X												
DMW-115-15	14	10/19/20	1624	SOIL	5	X	X	X												
DMW-115-20	15	10/19/20	1632	SOIL	5	X	X	X												
DMW-115-25	16	10/19/20	1642	SOIL	5	X	X	X												

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	BLAKE LYNDE	HARTCROWSON	10/19/20	1722
Received by:	ERIC GOUN	FRB	10/19/20	1722
Relinquished by:				
Received by:				
Samples received at <u>4</u> °C				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

October 26, 2020

Marissa Goodman, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Ms Goodman:

Included are the results from the testing of material submitted on October 20, 2020 from the 1940904, F&BI 010353 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: Mark Dagel  
HCR1026R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 20, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010353 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010353 -01	DMW-11S-30
010353 -02	DMW-11S-35
010353 -03	DMW-11S-40
010353 -04	DMW-11S-45
010353 -05	DMW-11S-50
010353 -06	DMW-11S-55
010353 -07	DMW-12S-5
010353 -08	DMW-12S-10
010353 -09	DMW-12S-15
010353 -10	DMW-12S-20
010353 -11	DMW-12S-25
010353 -12	DMW-12S-30
010353 -13	DMW-12S-35
010353 -14	DMW-12S-40
010353 -15	DMW-12S-45
010353 -16	DMW-12S-50
010353 -17	DMW-12S-55
010353 -18	Trip Blank 10-20-20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20  
 Date Received: 10/20/20  
 Project: 1940904, F&BI 010353  
 Date Extracted: 10/21/20  
 Date Analyzed: 10/22/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-11S-30 010353-01	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-11S-35 010353-02	<0.02	<0.02	0.026	<0.06	<5	80
DMW-11S-40 010353-03	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-11S-45 010353-04	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-11S-50 010353-05	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-11S-55 010353-06	<0.02	<0.02	<0.02	<0.06	<5	75
DMW-12S-5 010353-07	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-12S-10 010353-08	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-12S-15 010353-09	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-12S-20 010353-10	<0.02	<0.02	<0.02	<0.06	<5	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20  
 Date Received: 10/20/20  
 Project: 1940904, F&BI 010353  
 Date Extracted: 10/21/20  
 Date Analyzed: 10/22/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-12S-25 010353-11	<0.02	<0.02	<0.02	<0.06	<5	72
DMW-12S-30 010353-12	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-12S-35 010353-13	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-12S-40 010353-14	<0.02	0.025	<0.02	<0.06	<5	82
DMW-12S-45 010353-15	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-12S-50 010353-16	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-12S-55 010353-17	<0.02	<0.02	<0.02	<0.06	<5	73
Method Blank 00-2303 MB	<0.02	<0.02	<0.02	<0.06	<5	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20  
Date Received: 10/20/20  
Project: 1940904, F&BI 010353  
Date Extracted: 10/23/20  
Date Analyzed: 10/23/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
Trip Blank 10-20-20 010353-18	<1	<1	<1	<3	78
Method Blank 00-2307 MB	<1	<1	<1	<3	76

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20  
Date Received: 10/20/20  
Project: 1940904, F&BI 010353  
Date Extracted: 10/21/20  
Date Analyzed: 10/21/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
DMW-11S-30 010353-01	<50	<250	90
DMW-11S-35 010353-02	<50	<250	85
DMW-11S-40 010353-03	<50	<250	89
DMW-11S-45 010353-04	<50	<250	91
DMW-11S-50 010353-05	<50	<250	90
DMW-11S-55 010353-06	<50	<250	90
DMW-12S-5 010353-07	<50	<250	83
DMW-12S-10 010353-08	<50	<250	90
DMW-12S-15 010353-09	<50	<250	87
DMW-12S-20 010353-10	<50	<250	86

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20  
Date Received: 10/20/20  
Project: 1940904, F&BI 010353  
Date Extracted: 10/21/20  
Date Analyzed: 10/21/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
DMW-12S-25 010353-11	<50	<250	90
DMW-12S-30 010353-12	<50	<250	87
DMW-12S-35 010353-13	<50	<250	92
DMW-12S-40 010353-14	<50	<250	92
DMW-12S-45 010353-15	<50	<250	92
DMW-12S-50 010353-16	<50	<250	91
DMW-12S-55 010353-17	<50	<250	88
Method Blank 00-2367 MB	<50	<250	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-30	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-01 1/6
Date Analyzed:	10/22/20	Data File:	102206.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-35	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-02 1/6
Date Analyzed:	10/22/20	Data File:	102209.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-40	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-03 1/6
Date Analyzed:	10/22/20	Data File:	102210.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-45	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-04 1/6
Date Analyzed:	10/22/20	Data File:	102211.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-50	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-05 1/6
Date Analyzed:	10/22/20	Data File:	102212.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-11S-55	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-06 1/6
Date Analyzed:	10/22/20	Data File:	102213.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-5	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-07 1/6
Date Analyzed:	10/22/20	Data File:	102216.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	76	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-10	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-08 1/6
Date Analyzed:	10/22/20	Data File:	102217.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	76	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-15	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-09 1/6
Date Analyzed:	10/22/20	Data File:	102218.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-20	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-10 1/6
Date Analyzed:	10/22/20	Data File:	102219.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-25	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-11 1/6
Date Analyzed:	10/22/20	Data File:	102220.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	76	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-30	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-12 1/6
Date Analyzed:	10/22/20	Data File:	102221.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	76	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-35	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-13 1/6
Date Analyzed:	10/22/20	Data File:	102222.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-40	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-14 1/6
Date Analyzed:	10/22/20	Data File:	102223.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-45	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-15 1/6
Date Analyzed:	10/22/20	Data File:	102224.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	79	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-50	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-16 1/6
Date Analyzed:	10/22/20	Data File:	102225.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-12S-55	Client:	Hart Crowser
Date Received:	10/20/20	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	010353-17 1/6
Date Analyzed:	10/22/20	Data File:	102226.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	82	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	00-2358 mb2 1/6
Date Analyzed:	10/22/20	Data File:	102215.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	101	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904, F&BI 010353
Date Extracted:	10/21/20	Lab ID:	00-2368 mb 1/6
Date Analyzed:	10/22/20	Data File:	102205.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	98	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20

Date Received: 10/20/20

Project: 1940904, F&BI 010353

**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: 010353-01 (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)	0.5	85	69-120
Toluene	mg/kg (ppm)	0.5	86	70-117
Ethylbenzene	mg/kg (ppm)	0.5	85	65-123
Xylenes	mg/kg (ppm)	1.5	86	66-120
Gasoline	mg/kg (ppm)	20	85	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20

Date Received: 10/20/20

Project: 1940904, F&BI 010353

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 010310-03 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	99	65-118
Toluene	ug/L (ppb)	50	97	72-122
Ethylbenzene	ug/L (ppb)	50	96	73-126
Xylenes	ug/L (ppb)	150	93	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20

Date Received: 10/20/20

Project: 1940904, F&BI 010353

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010353-01 (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	<50	101	99	64-133	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	101	58-147

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20

Date Received: 10/20/20

Project: 1940904, F&BI 010353

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES FOR  
POLYCHLORINATED BIPHENYLS AS  
AROCOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 010353-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	82	84	29-125	2
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	86	87	25-137	1

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	92	55-137
Aroclor 1260	mg/kg (ppm)	0.25	98	51-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/26/20

Date Received: 10/20/20

Project: 1940904, F&BI 010353

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES FOR  
POLYCHLORINATED BIPHENYLS AS  
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 010289-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	85	92	44-107	8
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	92	96	38-124	4

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	95	47-158
Aroclor 1260	mg/kg (ppm)	0.25	102	69-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

010353  
 MARY DABGL@HARTLOWSEL.COM

SAMPLE CHAIN OF CUSTODY

ME 10/20/20 VWI/V53/D032

Report To MARLESA-GOWAN@HARTLOWSEL.COM  
 Company HART LOW SEL  
 Address 3131 ELLIOT NE #600  
 City, State, ZIP SEATTLE  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

Page # 1 of 1

TURNAROUND TIME  
 Standard turnaround  
KRUSH 72-HR  
 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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					
DMW-115-30	01 A-E	10/20/20	0802	SOIL	5	X	X	X					X				
DMW-115-35	02	10/20/20	0812	SOIL	5	X	X	X					X				
DMW-115-40	03	10/20/20	0826	SOIL	5	X	X	X					X				
DMW-115-45	04	10/20/20	0850	SOIL	5	X	X	X					X				
DMW-115-50	05	10/20/20	0904	SOIL	5	X	X	X					X				
DMW-115-55	06	10/20/20	0916	SOIL	5	X	X	X					X				
DMW-125-5	07	10/20/20	1148	SOIL	5	X	X	X					X				
DMW-125-10	08	10/20/20	1153	SOIL	5	X	X	X					X				
DMW-125-15	09	10/20/20	1206	SOIL	5	X	X	X					X				
DMW-125-20	10	10/20/20	1317	SOIL	5	X	X	X					X				

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	BLAKE LYTLE	HART LOW SEL	10/20/20	1722
Received by:	BISRAT TADESSE	FBI	10/20/20	1722
Relinquished by:				
Received by:				

Samples received at 3 °C

MARK. DABER@HARTCROWSER.COM  
 MARISSA. GOODMAN@HARTCROWSER.COM  
 Report To \_\_\_\_\_  
 Company 010353  
 Address \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

**SAMPLE CHAIN OF CUSTODY**

ME 10/20/20 WVI/US3/ DO3  
 Page # 2 of 2

SAMPLERS (signature) \_\_\_\_\_  
 PROJECT NAME 1940904 PO # \_\_\_\_\_  
 REMARKS \_\_\_\_\_ INVOICE TO \_\_\_\_\_  
 Project specific RLs? - Yes / No

**TURNAROUND TIME**  
 Standard turnaround  
 RUSH 72 HR  
 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										Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					
DMW-125-25	11 A-E	10/20/20	1330	SOIL	5	X	X	X				X					
DMW-125-30	12	10/20/20	1340	SOIL	5	X	X	X				X					
DMW-125-35	13	10/20/20	1349	SOIL	5	X	X	X				X					
DMW-125-40	14	10/20/20	1405	SOIL	5	X	X	X				X					
DMW-125-45	15	10/20/20	1418	SOIL	5	X	X	X				X					
DMW-125-50	16	10/20/20	1430	SOIL	5	X	X	X				X					
DMW-125-55	17	10/20/20	1440	SOIL	5	X	X	X				X					
TRIP BLANK 10-20-20	18 A-B	10/20/20		WATER	2			X									

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	BRUCE LYTLE	HART CROWSER	10/20/20	1722
Received by:	BISRAT TADESSE	FBI	10/20/20	1722
Relinquished by:				
Received by:				

Samples received at 3:00

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

October 29, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on October 23, 2020 from the 1940904, F&BI 010424 project. There are 19 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: Marissa Goodman  
HCR1029R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 23, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010424 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010424 -01	DMW-13S-10
010424 -02	DMW-13S-15
010424 -03	DMW-13S-20
010424 -04	DMW-13S-25
010424 -05	DMW-13S-30
010424 -06	DMW-13S-35
010424 -07	DMW-13S-40
010424 -08	DMW-13S-45
010424 -09	DMW-13S-50
010424 -10	TRIP BLANK 10-23-2020

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20  
 Date Received: 10/23/20  
 Project: 1940904, F&BI 010424  
 Date Extracted: 10/27/20  
 Date Analyzed: 10/27/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-13S-10 010424-01	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-13S-15 010424-02	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-13S-20 010424-03	<0.02	<0.02	<0.02	<0.06	<5	77
DMW-13S-25 010424-04	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-13S-30 010424-05	<0.02	<0.02	<0.02	<0.06	<5	76
DMW-13S-35 010424-06	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-13S-40 010424-07	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-13S-45 010424-08	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-13S-50 010424-09	<0.02	<0.02	<0.02	<0.06	<5	71
Method Blank 00-2386 MB2	<0.02	<0.02	<0.02	<0.06	<5	78

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20  
Date Received: 10/23/20  
Project: 1940904, F&BI 010424  
Date Extracted: 10/27/20  
Date Analyzed: 10/27/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
TRIP BLANK 10-23-2020 010424-10	<1	<1	<1	<3	79
Method Blank 00-2387 MB	<1	<1	<1	<3	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20  
Date Received: 10/23/20  
Project: 1940904, F&BI 010424  
Date Extracted: 10/26/20  
Date Analyzed: 10/26/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
DMW-13S-10 010424-01	<50	<250	73
DMW-13S-15 010424-02	<50	<250	77
DMW-13S-20 010424-03	<50	<250	79
DMW-13S-25 010424-04	<50	<250	74
DMW-13S-30 010424-05	<50	<250	56
DMW-13S-35 010424-06	<50	<250	80
DMW-13S-40 010424-07	<50	<250	80
DMW-13S-45 010424-08	<50	<250	89
DMW-13S-50 010424-09	<50	<250	79
Method Blank 00-2384 MB	<50	<250	77

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-10	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-01 1/6
Date Analyzed:	10/26/20	Data File:	102613.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	0.024
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-15	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-02 1/6
Date Analyzed:	10/26/20	Data File:	102616.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-20	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-03 1/6
Date Analyzed:	10/26/20	Data File:	102617.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	79	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-25	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-04 1/6
Date Analyzed:	10/26/20	Data File:	102619.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-30	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-05 1/6
Date Analyzed:	10/26/20	Data File:	102620.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-35	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-06 1/6
Date Analyzed:	10/26/20	Data File:	102621.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-40	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-07 1/6
Date Analyzed:	10/26/20	Data File:	102622.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-45	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-08 1/6
Date Analyzed:	10/26/20	Data File:	102623.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-13S-50	Client:	Hart Crowser
Date Received:	10/23/20	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	010424-09 1/6
Date Analyzed:	10/26/20	Data File:	102624.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904, F&BI 010424
Date Extracted:	10/26/20	Lab ID:	00-2383 mb 1/6
Date Analyzed:	10/26/20	Data File:	102612.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	96	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20

Date Received: 10/23/20

Project: 1940904, F&BI 010424

**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: 010308-06 (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)	0.5	86	69-120
Toluene	mg/kg (ppm)	0.5	86	70-117
Ethylbenzene	mg/kg (ppm)	0.5	82	65-123
Xylenes	mg/kg (ppm)	1.5	84	66-120
Gasoline	mg/kg (ppm)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20

Date Received: 10/23/20

Project: 1940904, F&BI 010424

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 010441-01 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	100	65-118
Toluene	ug/L (ppb)	50	98	72-122
Ethylbenzene	ug/L (ppb)	50	96	73-126
Xylenes	ug/L (ppb)	150	94	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20

Date Received: 10/23/20

Project: 1940904, F&BI 010424

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010424-01 (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	<50	86	94	64-133	9

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	58-147

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/29/20

Date Received: 10/23/20

Project: 1940904, F&BI 010424

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES FOR  
POLYCHLORINATED BIPHENYLS AS  
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 010424-01 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	89	86	29-125	3
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	86	85	25-137	1

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	105	55-137
Aroclor 1260	mg/kg (ppm)	0.25	106	51-150

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

010424

MARK. PABEL@HARTCROWSON.COM

MARISA. GOODMAN@HARTCROWSON.COM

Report To \_\_\_\_\_

Company HART CROWSON

Address 3131 ELLIOT #600

City, State, ZIP SEATTLE

Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLE CHAIN OF CUSTODY ME 10/23/20

VS4 / DO3 / VW1  
Page # 1 of 1

SAMPLERS (signature) _____	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

**TURNAROUND TIME**

Standard turnaround  
 RUSH 72-HR  
 Rush charges authorized by: \_\_\_\_\_

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**SAMPLE DISPOSAL**

Archive samples  
 Other \_\_\_\_\_  
 Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	
DMW-135-10	01A-E	10/23/20	0950	SOIL	5	X	X	X				X	
DMW-135-15	02	10/23/20	1009	SOIL	5	X	X	X				X	
DMW-135-20	03	10/23/20	1018	SOIL	5	X	X	X				X	
DMW-135-25	04	10/23/20	1036	SOIL	5	X	X	X				X	
DMW-135-30	05	10/23/20	1056	SOIL	5	X	X	X				X	
DMW-135-35	06	10/23/20	1118	SOIL	5	X	X	X				X	
DMW-135-40	07	10/23/20	1148	SOIL	5	X	X	X				X	
DMW-135-45	08	10/23/20	1324	SOIL	5	X	X	X				X	
DMW-135-50	09	10/23/20	1340	SOIL	5	X	X	X				X	
TRIP BLANK 10-23-2020	10 AB	10/23/20		WATER	2			X					

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	BLAKE LYNE	HART CROWSON	10/23/20	1529
Received by:	VINLY	FRB 1	10/23/20	1529
Relinquished by:				
Received by:		Samples received at	<u>4</u> °C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

October 30, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on October 26, 2020 from the 1940904, F&BI 010451 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: Marissa Goodman  
HCR1030R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010451 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010451 -01	DMW-7S-5
010451 -02	DMW-7S-10
010451 -03	DMW-7S-15
010451 -04	DMW-7S-20
010451 -05	DMW-7S-25
010451 -06	DMW-7S-30
010451 -07	DMW-7S-35
010451 -08	TRIP BLANK 10-26-20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20  
 Date Received: 10/26/20  
 Project: 1940904, F&BI 010451  
 Date Extracted: 10/27/20  
 Date Analyzed: 10/28/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-7S-5 010451-01	<0.02	<0.02	<0.02	<0.06	<5	68
DMW-7S-10 010451-02	<0.02	<0.02	<0.02	<0.06	<5	82
DMW-7S-15 010451-03	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-7S-20 010451-04	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-7S-25 010451-05	<0.02	<0.02	<0.02	<0.06	<5	71
DMW-7S-30 010451-06	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-7S-35 010451-07	<0.02	<0.02	<0.02	<0.06	<5	80
Method Blank 00-2310 MB	<0.02	<0.02	<0.02	<0.06	<5	81

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20  
Date Received: 10/26/20  
Project: 1940904, F&BI 010451  
Date Extracted: 10/28/20  
Date Analyzed: 10/28/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
TRIP BLANK 10-26-20 010451-08	<1	<1	<1	<3	79
Method Blank 00-2389 MB	<1	<1	<1	<3	76

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20  
Date Received: 10/26/20  
Project: 1940904, F&BI 010451  
Date Extracted: 10/27/20  
Date Analyzed: 10/27/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
DMW-7S-5 010451-01	<50	<250	95
DMW-7S-10 010451-02	<50	<250	95
DMW-7S-15 010451-03	<50	<250	94
DMW-7S-20 010451-04	<50	<250	89
DMW-7S-25 010451-05	<50	<250	101
DMW-7S-30 010451-06	<50	<250	92
DMW-7S-35 010451-07	<50	<250	100
Method Blank 00-2434 MB	<50	<250	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20

Date Received: 10/26/20

Project: 1940904, F&BI 010451

**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: 010463-04 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	0.14	0.16	15
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)	0.5	83	69-120
Toluene	mg/kg (ppm)	0.5	84	70-117
Ethylbenzene	mg/kg (ppm)	0.5	81	65-123
Xylenes	mg/kg (ppm)	1.5	82	66-120
Gasoline	mg/kg (ppm)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20

Date Received: 10/26/20

Project: 1940904, F&BI 010451

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 010475-01 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	65-118
Toluene	ug/L (ppb)	50	98	72-122
Ethylbenzene	ug/L (ppb)	50	98	73-126
Xylenes	ug/L (ppb)	150	93	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/30/20

Date Received: 10/26/20

Project: 1940904, F&BI 010451

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010450-01 (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	<50	92	90	73-135	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	74-139

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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

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

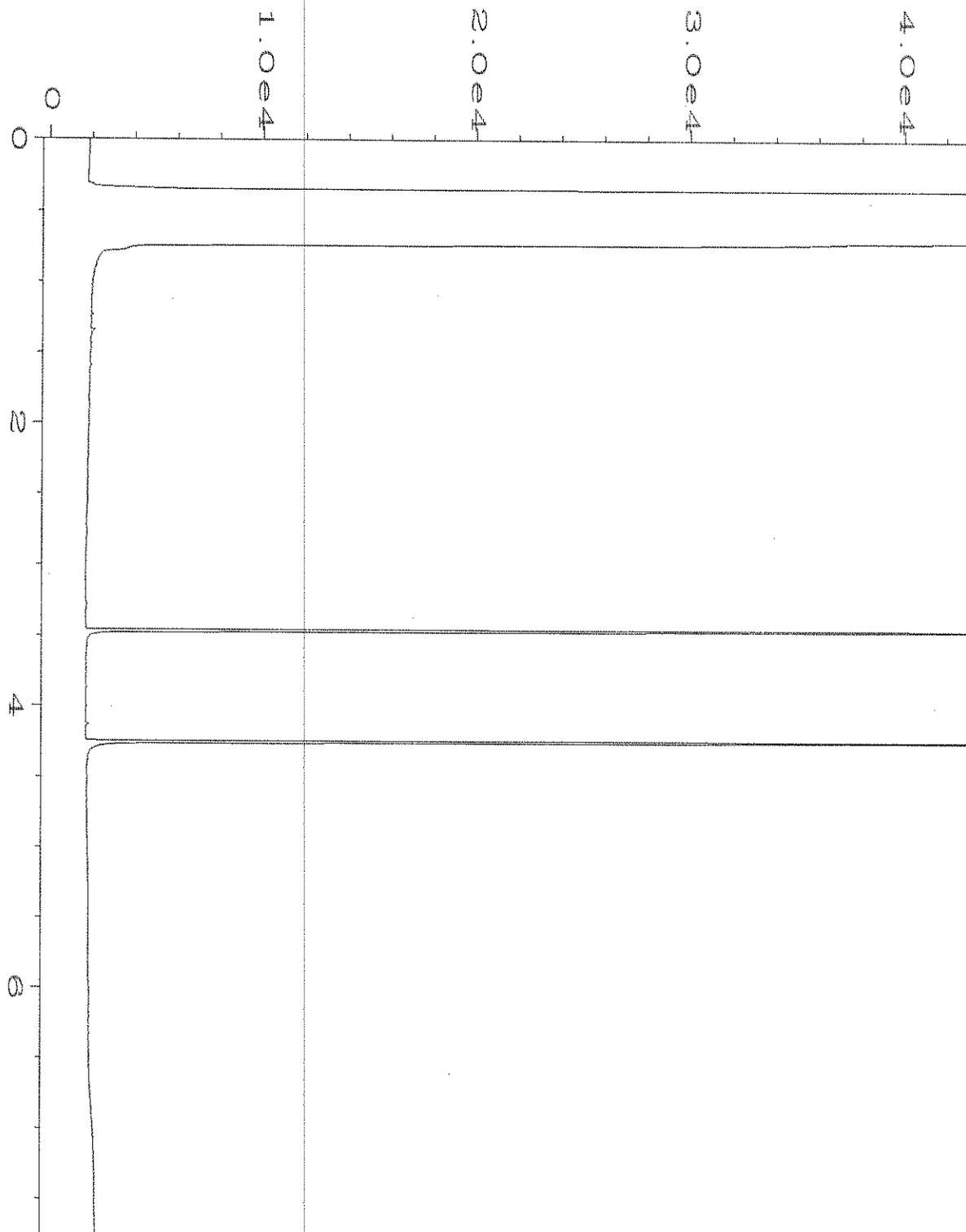
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

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.

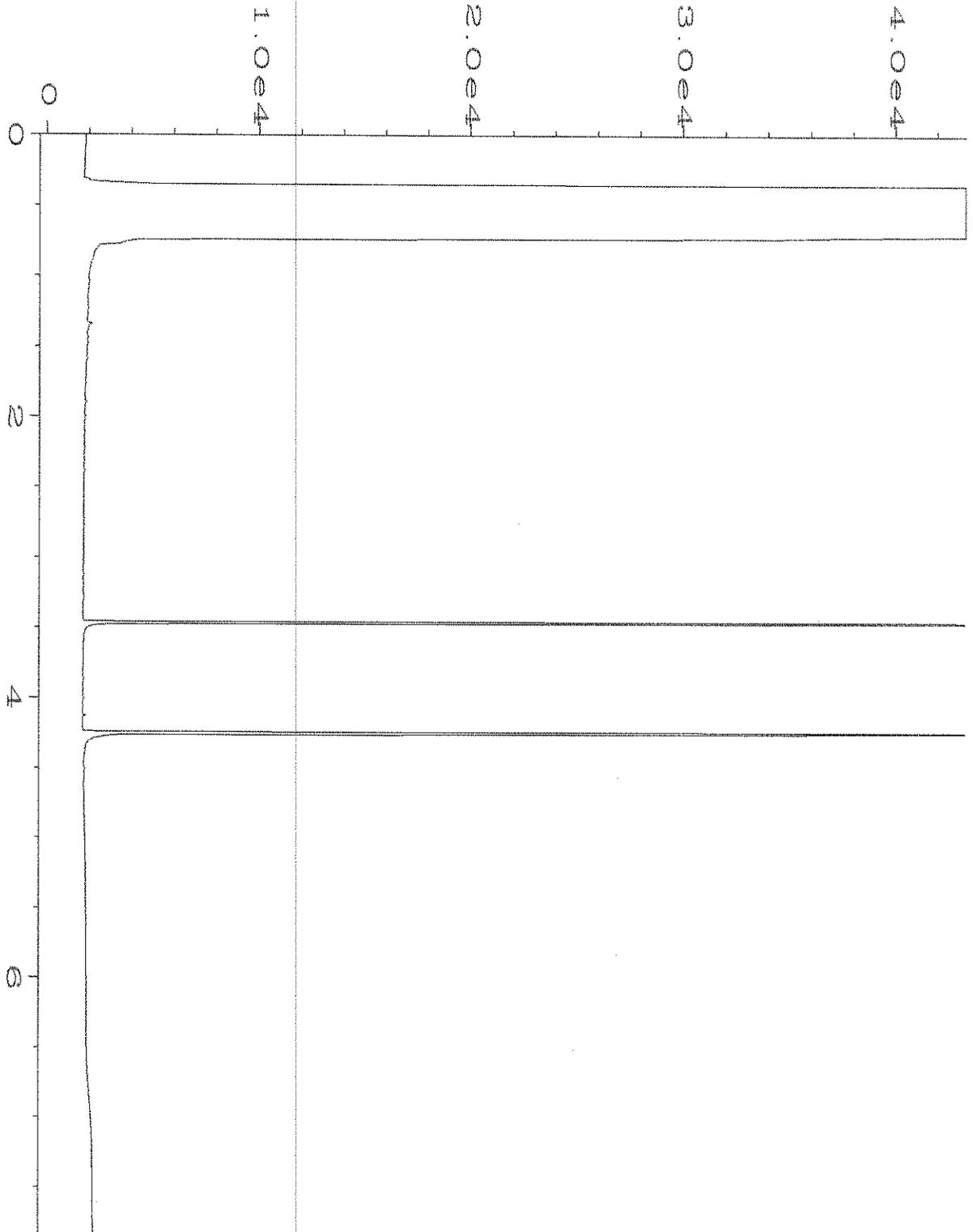
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

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

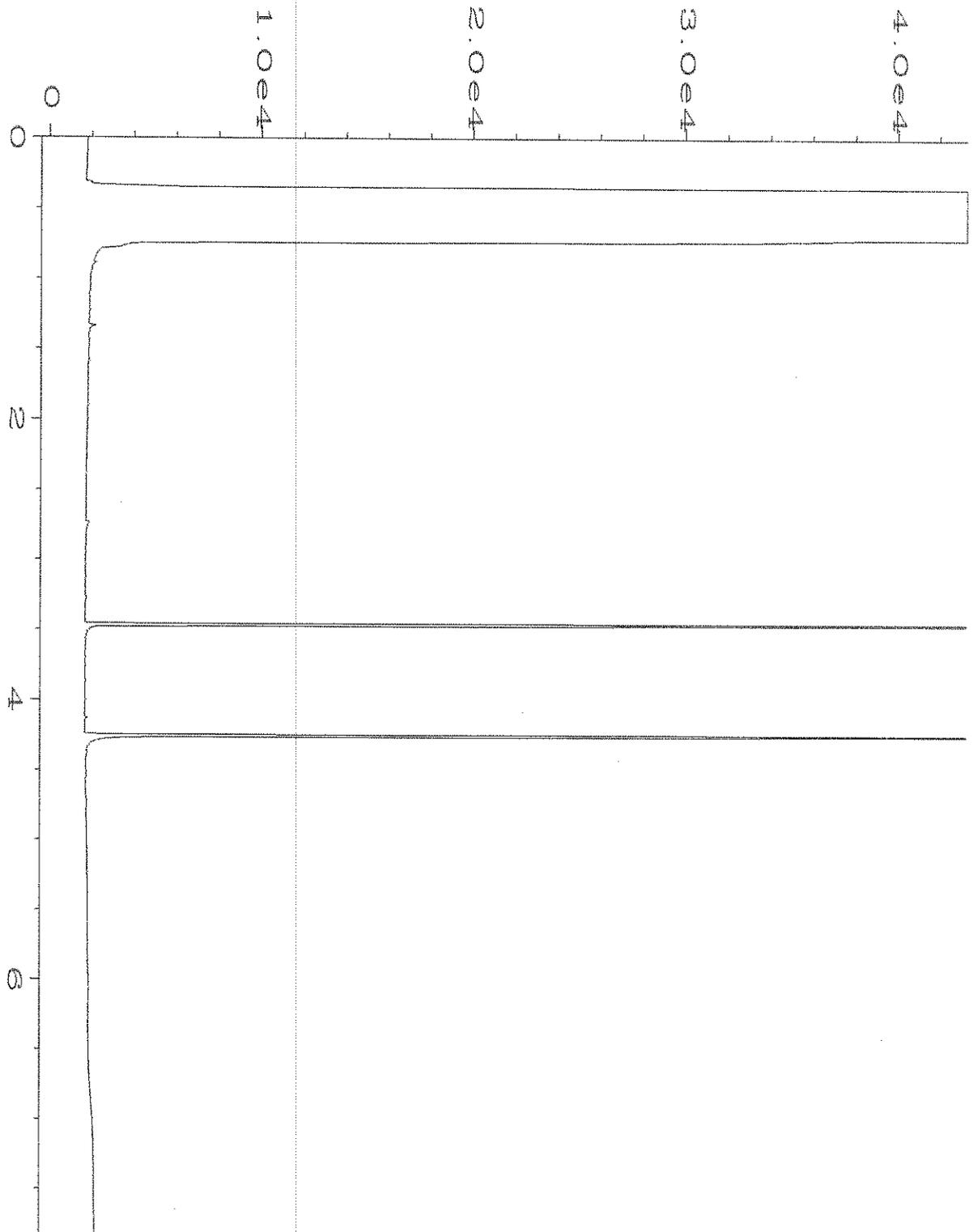
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



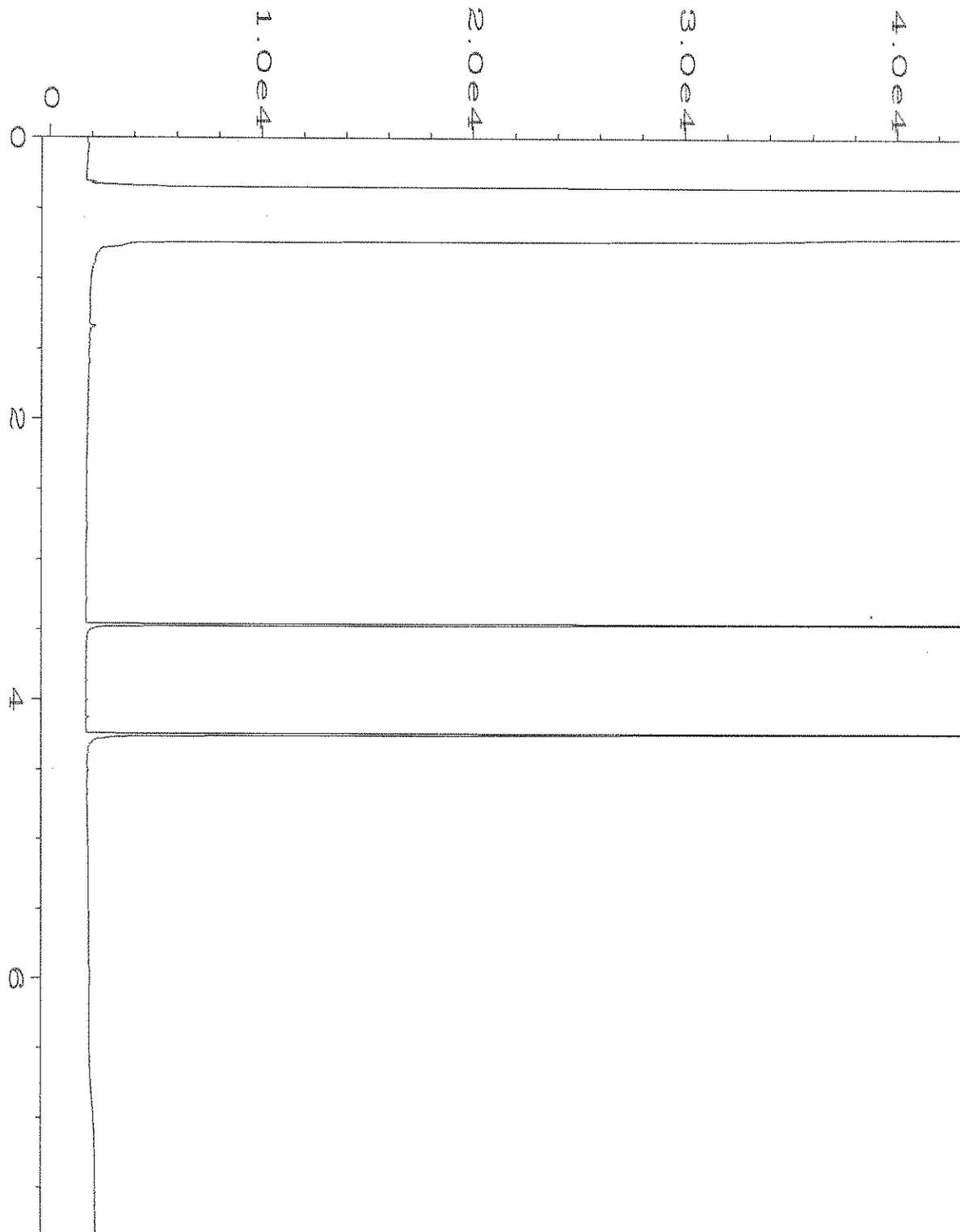
Data File Name	: C:\HPCHEM\4\DATA\10-27-20\022F0601.D	Page Number	: 1
Operator	: TL	Vial Number	: 22
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-01	Sequence Line	: 6
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 11:54 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:43 AM		



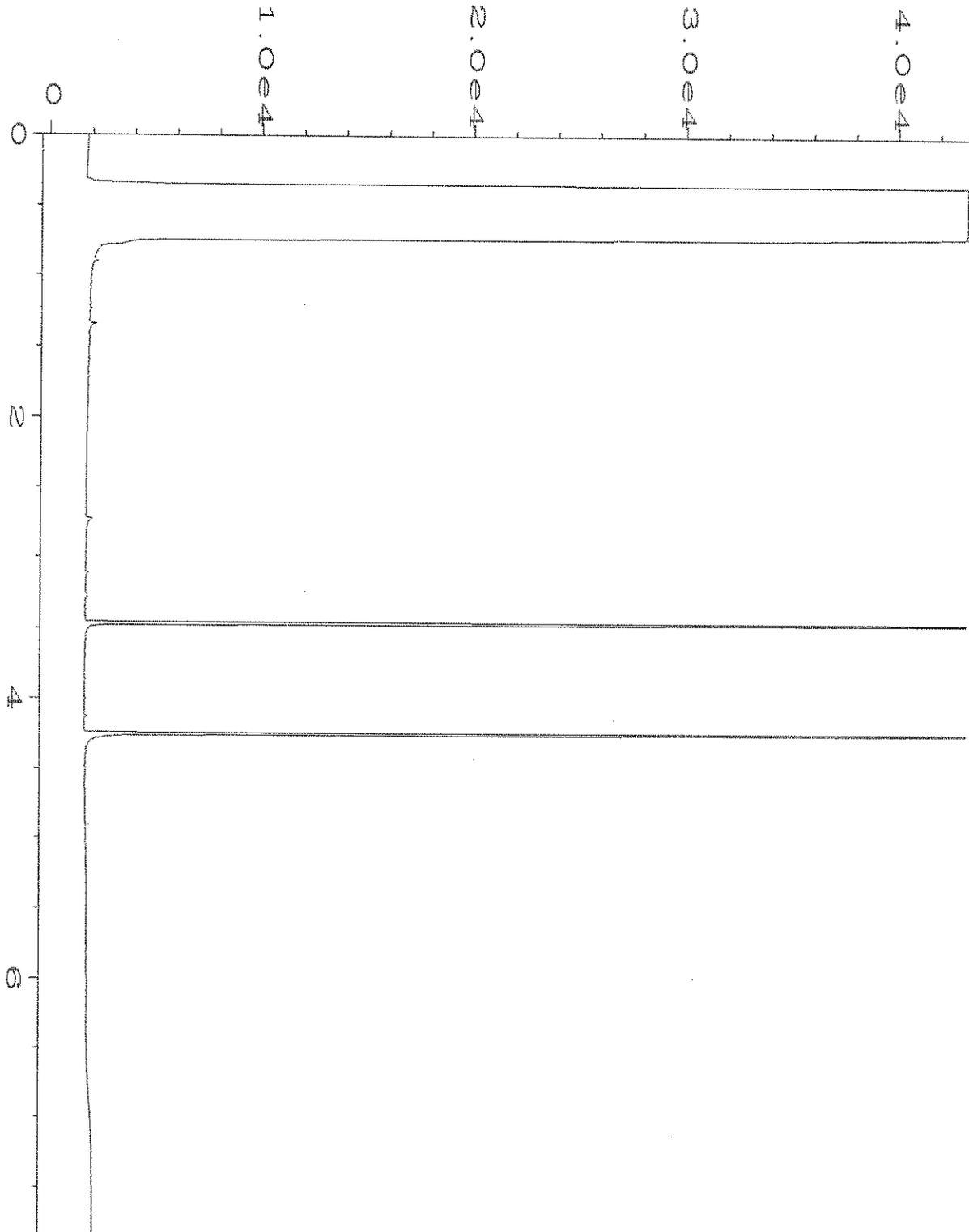
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Operator	: TL	Vial Number	: 23
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-02	Sequence Line	: 6
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 12:07 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:43 AM		



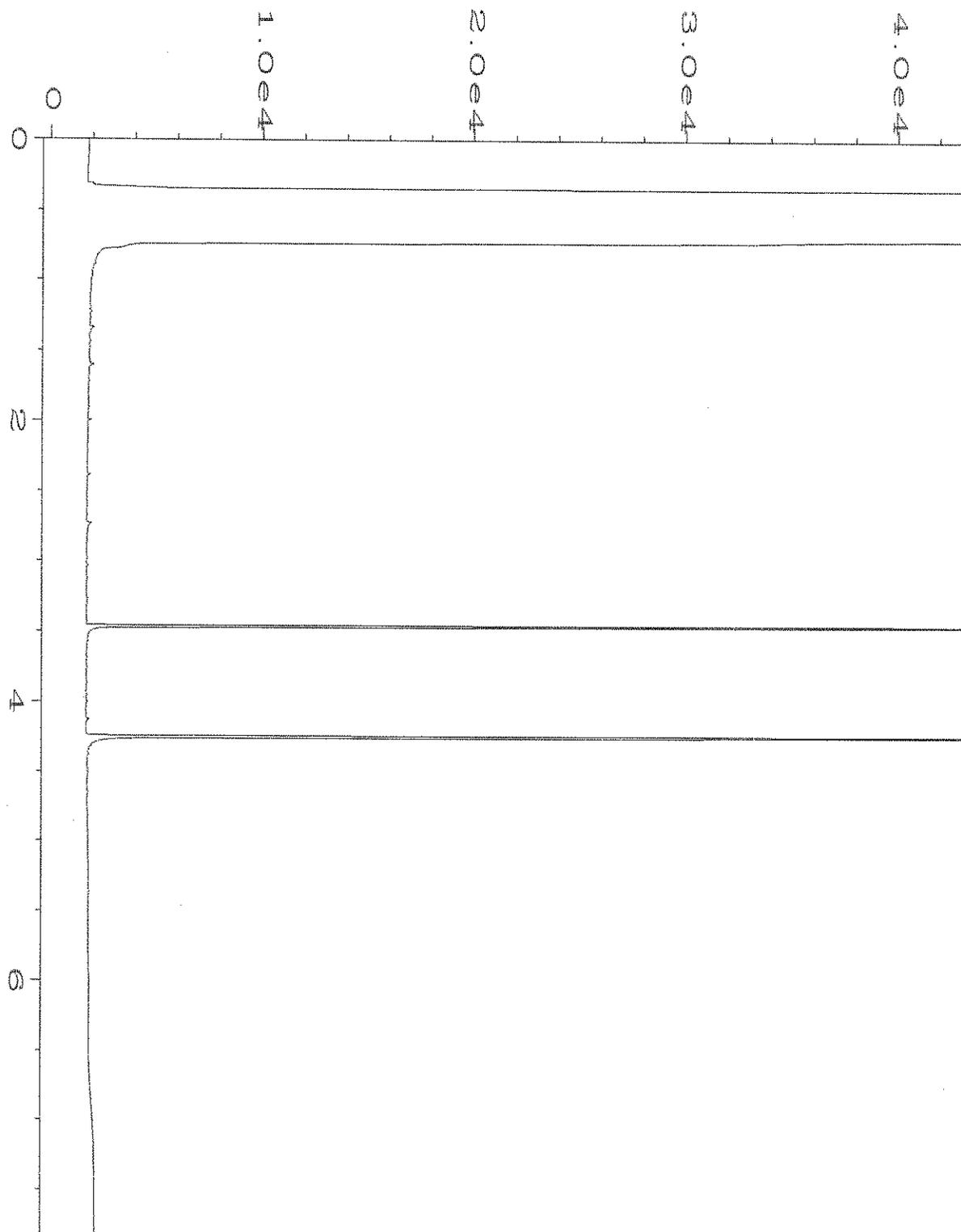
Data File Name	: C:\HPCHEM\4\DATA\10-27-20\024F0601.D	Page Number	: 1
Operator	: TL	Vial Number	: 24
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-03	Sequence Line	: 6
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 12:19 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



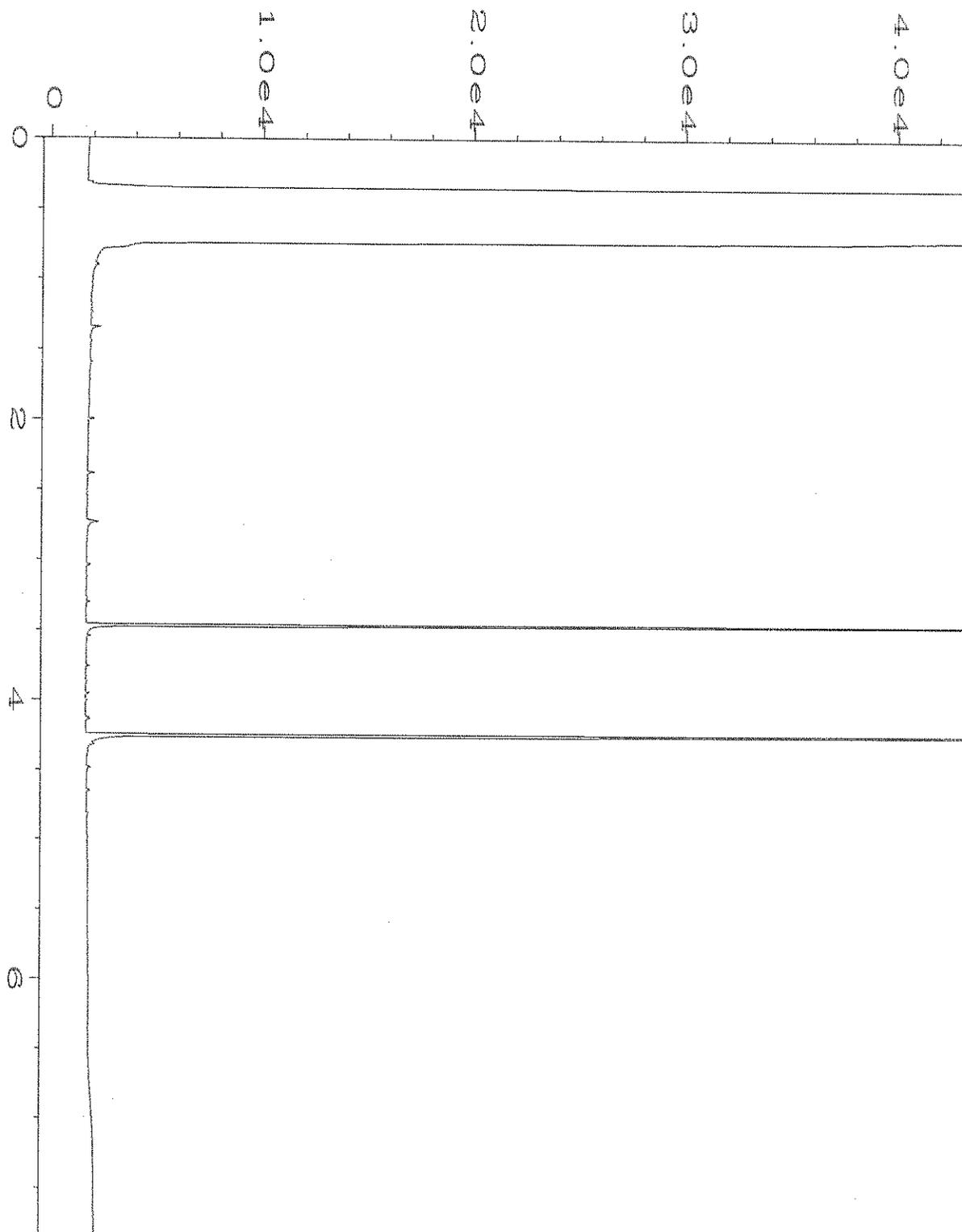
Data File Name	: C:\HPCHEM\4\DATA\10-27-20\025F0701.D	Page Number	: 1
Operator	: TL	Vial Number	: 25
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-04	Sequence Line	: 7
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 01:22 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



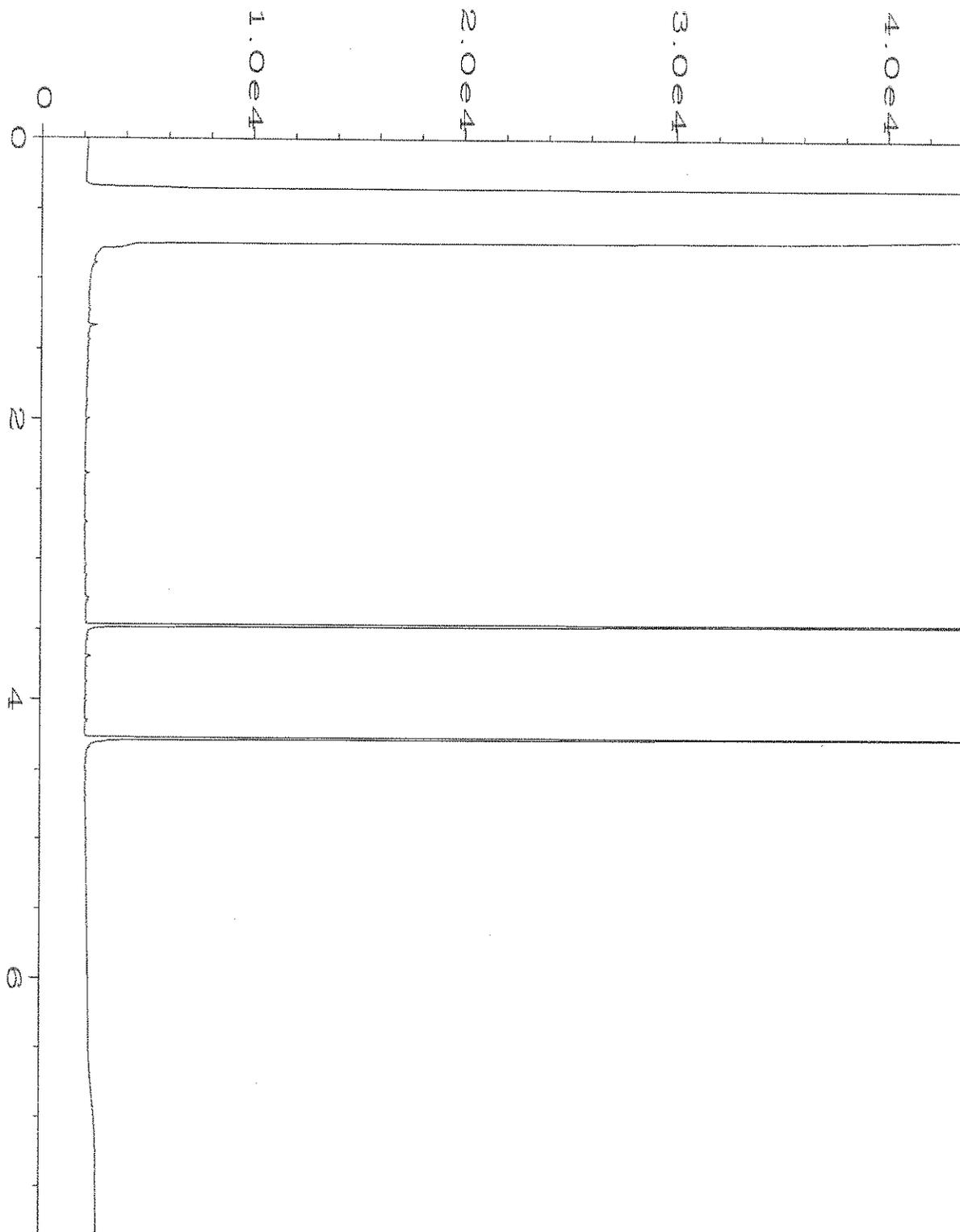
Data File Name	: C:\HPCHEM\4\DATA\10-27-20\026F0701.D	Page Number	: 1
Operator	: TL	Vial Number	: 26
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-05	Sequence Line	: 7
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 01:35 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



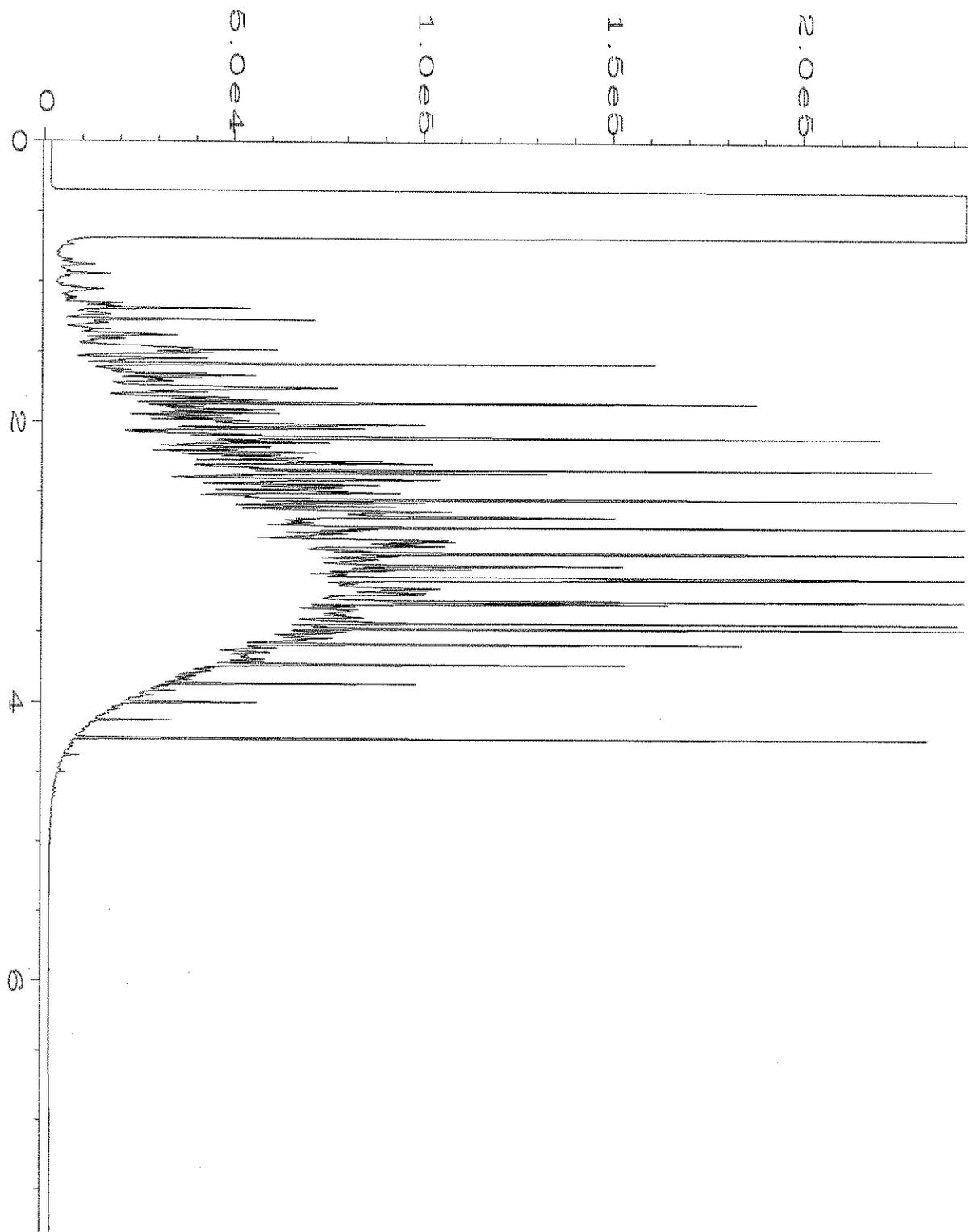
Data File Name	: C:\HPCHEM\4\DATA\10-27-20\027F0601.D	Page Number	: 1
Operator	: TL	Vial Number	: 27
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-06	Sequence Line	: 6
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 12:57 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



Data File Name	: C:\HPCHEM\4\DATA\10-27-20\028F0601.D	Page Number	: 1
Operator	: TL	Vial Number	: 28
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 010451-07	Sequence Line	: 6
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 01:10 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



Data File Name	: C:\HPCHEM\4\DATA\10-27-20\006F0301.D	Page Number	: 1
Operator	: TL	Vial Number	: 6
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 00-2434 mb	Sequence Line	: 3
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 27 Oct 20 08:36 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:44 AM		



Data File Name	: C:\HPCHEM\4\DATA\10-27-20\005F0801.D	Page Number	: 1
Operator	: TL	Vial Number	: 5
Instrument	: GC#4	Injection Number	: 1
Sample Name	: 1000 Dx 60-170B	Sequence Line	: 8
Run Time Bar Code:		Instrument Method	: DX.MTH
Acquired on	: 27 Oct 20 02:00 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	28 Oct 20 07:45 AM		

010451 MARK DABEL CHARTCLOWSEL.COM  
 MARKSA.GOODMAN@HARTCLOWSEL.COM  
 Report To

Company HART CLOWSEL  
 Address 3131 ELLIOT AVE #600  
 City, State, ZIP SEATTLE  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLE CHAIN OF CUSTODY

ME 10/26/20

VS2/D02/UW21  
 Page # \_\_\_\_\_ of \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME <input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH <u>72-HR</u> Rush charges authorized by: _____
SAMPLE DISPOSAL <input type="checkbox"/> Archive samples <input type="checkbox"/> Other _____ Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DMW-75-5	01A-E	10/26/20	1151	SOIL	5	X	X	X										
DMW-75-10	02	10/26/20	1155	SOIL	5	X	X	X										
DMW-75-15	03	10/26/20	1208	SOIL	5	X	X	X										
DMW-75-20	04	10/26/20	1215	SOIL	5	X	X	X										
DMW-75-25	05	10/26/20	1233	SOIL	5	X	X	X										
DMW-75-30	06	10/26/20	1238	SOIL	5	X	X	X										
DMW-75-35	07	10/26/20	1305	SOIL	5	X	X	X										
TRIP BLANK 10-26-20	08A-B	10/26/20		WATER	2			X										

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	BLAKE LYTLE	HART CRAWSEL	10/26/20	1620
Received by:	Liz Webber-Bruya	F?B	10/26/20	1620
Relinquished by:				
Received by:				

Samples received at 4 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

November 2, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on October 27, 2020 from the 1940904, F&BI 010490 project. There are 11 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: Marissa Goodman  
HCR1102R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 27, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010490 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010490 -01	DMW-8S-5
010490 -02	DMW-8S-10
010490 -03	DMW-8S-15
010490 -04	DMW-8S-20
010490 -05	DMW-8S-25
010490 -06	DMW-8S-30
010490 -07	DMW-8S-35
010490 -08	DMW-9S-5
010490 -09	DMW-9S-10
010490 -10	DMW-9S-15
010490 -11	DMW-9S-20
010490 -12	DMW-9S-25
010490 -13	DMW-9S-30
010490 -14	Trip Blank 10-27-2020

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20  
 Date Received: 10/27/20  
 Project: 1940904, F&BI 010490  
 Date Extracted: 10/28/20  
 Date Analyzed: 10/28/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-8S-5 010490-01	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-8S-10 010490-02	<0.02	<0.02	<0.02	<0.06	<5	67
DMW-8S-15 010490-03	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-8S-20 010490-04	<0.02	<0.02	<0.02	<0.06	<5	113
DMW-8S-25 010490-05	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-8S-30 010490-06	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-8S-35 010490-07	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-9S-5 010490-08	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-9S-10 010490-09	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-9S-15 010490-10	<0.02	<0.02	<0.02	<0.06	<5	70

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20  
 Date Received: 10/27/20  
 Project: 1940904, F&BI 010490  
 Date Extracted: 10/28/20  
 Date Analyzed: 10/28/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-9S-20 010490-11	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-9S-25 010490-12	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-9S-30 010490-13	<0.02	<0.02	<0.02	<0.06	<5	79
Method Blank 00-2388 MB2	<0.02	<0.02	<0.02	<0.06	<5	82
Method Blank 00-2390 MB	<0.02	<0.02	<0.02	<0.06	<5	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20  
Date Received: 10/27/20  
Project: 1940904, F&BI 010490  
Date Extracted: 10/29/20  
Date Analyzed: 10/29/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
Trip Blank 10-27-2020 010490-14	<1	<1	<1	<3	77
Method Blank 00-2392 MB	<1	<1	<1	<3	78

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20  
Date Received: 10/27/20  
Project: 1940904, F&BI 010490  
Date Extracted: 10/28/20  
Date Analyzed: 10/28/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
DMW-8S-5 010490-01	<50	<250	90
DMW-8S-10 010490-02	<50	<250	87
DMW-8S-15 010490-03	<50	<250	88
DMW-8S-20 010490-04	<50	<250	88
DMW-8S-25 010490-05	<50	<250	90
DMW-8S-30 010490-06	<50	<250	96
DMW-8S-35 010490-07	<50	<250	92
DMW-9S-5 010490-08	<50	<250	95
DMW-9S-10 010490-09	<50	<250	92
DMW-9S-15 010490-10	<50	<250	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20  
Date Received: 10/27/20  
Project: 1940904, F&BI 010490  
Date Extracted: 10/28/20  
Date Analyzed: 10/28/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
DMW-9S-20 010490-11	<50	<250	95
DMW-9S-25 010490-12	<50	<250	96
DMW-9S-30 010490-13	<50	<250	90
Method Blank 00-2439 MB	<50	<250	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20

Date Received: 10/27/20

Project: 1940904, F&BI 010490

**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: 010478-01 (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)	0.5	96	66-121
Toluene	mg/kg (ppm)	0.5	92	72-128
Ethylbenzene	mg/kg (ppm)	0.5	88	69-132
Xylenes	mg/kg (ppm)	1.5	87	69-131
Gasoline	mg/kg (ppm)	20	90	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20

Date Received: 10/27/20

Project: 1940904, F&BI 010490

**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: 010490-01 (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)	0.5	84	69-120
Toluene	mg/kg (ppm)	0.5	86	70-117
Ethylbenzene	mg/kg (ppm)	0.5	82	65-123
Xylenes	mg/kg (ppm)	1.5	87	66-120
Gasoline	mg/kg (ppm)	20	100	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20

Date Received: 10/27/20

Project: 1940904, F&BI 010490

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 010487-01 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	65-118
Toluene	ug/L (ppb)	50	95	72-122
Ethylbenzene	ug/L (ppb)	50	94	73-126
Xylenes	ug/L (ppb)	150	93	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/02/20

Date Received: 10/27/20

Project: 1940904, F&BI 010490

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010490-01 (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	<50	92	86	73-135	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	74-139

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

010490 MARK.PAGEL@HARTCROWSER.COM  
 MARISSA.600PMW@HARTCROWSER.COM

SAMPLE CHAIN OF CUSTODY <sup>MIS</sup>

10-27-20

VS2/VW2/D03  
 2

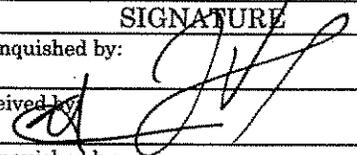
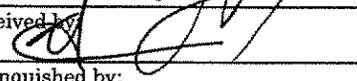
Report To \_\_\_\_\_  
 Company HART CROWSER  
 Address 3131 ELLIOT AVE STE 600  
 City, State, ZIP SEATTLE, WA  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

Page # _____ of <u>2</u>
<b>TURNAROUND TIME</b> <input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH <u>72-HR</u> Rush charges authorized by: _____
<b>SAMPLE DISPOSAL</b> <input type="checkbox"/> Archive samples <input type="checkbox"/> Other _____ Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DMW-85-5	01A-E	10/27/20	1003	SOIL	5	X	X	X										
DMW-85-10	02	10/27/20	1020	SOIL	5	X	X	X										
DMW-85-15	03	10/27/20	1028	SOIL	5	X	X	X										
DMW-85-20	04	10/27/20	1037	SOIL	5	X	X	X										
DMW-85-25	05	10/27/20	1049	SOIL	5	X	X	X										
DMW-85-30	06	10/27/20	1101	SOIL	5	X	X	X										
DMW-85-35	07	10/27/20	1145	SOIL	5	X	X	X										
DMW-95-5	08	10/27/20	1324	SOIL	5	X	X	X										
DMW-95-10	09	10/27/20	1331	SOIL	5	X	X	X										
DMW-95-15	10	10/27/20	1339	SOIL	5	X	X	X										

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	JOSH VANDERSWAL	HART CROWSER	10/27/20	1606
Received by: 	ERIC CLOW	F&B	10/27/20	1606
Relinquished by:				
Received by:				

Samples received at 4 °C

010490 MAIL ROOM @ HART CROWSON, COM  
 MALISSA. GOODMAN @ HART CROWSON, COM  
 Report To \_\_\_\_\_

**SAMPLE CHAIN OF CUSTODY** <sup>ME</sup>

10-27-20 USA/VWA/DO3  
 Page # 2 of 2

Company HART CROWSON  
 Address 3131 ELLIOT AVE #600  
 City, State, ZIP SEATTLE, WA  
 Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

<b>TURNAROUND TIME</b> <input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH <u>72-HR</u> Rush charges authorized by: _____
<b>SAMPLE DISPOSAL</b> <input type="checkbox"/> Archive samples <input type="checkbox"/> Other _____ Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DMW-95-20	11 A-E	10/27/20	1343	SOIL	5	X	X	X										
DMW-95-25	12	10/27/20	1357	SOIL	5	X	X	X										
DMW-95-30	13	10/27/20	1402	SOIL	5	X	X	X										
TRIP BLANK 10-27-2020	14 A-B	10/27/20		WATER	2	<del>X</del>		X										

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	JOSH VANDERWAAL	HART CROWSON	10/27/20	1606
	ERIC CROWNER	FCS	10/27/20	11 04
Received by:				
				Samples received at <u>4</u> °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

November 3, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on October 28, 2020 from the 1940904, F&BI 010517 project. There are 20 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: Marissa Goodman  
HCR1103R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 28, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 010517 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
010517 -01	DMW-14S-10
010517 -02	DMW-14S-15
010517 -03	DMW-14S-20
010517 -04	DMW-14S-20D
010517 -05	DMW-14S-25
010517 -06	DMW-14S-30
010517 -07	DMW-14S-35
010517 -08	DMW-14S-40
010517 -09	DMW-14S-45
010517 -10	DMW-14S-50
010517 -11	TRIP BLANK 10-28-2020

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20  
 Date Received: 10/28/20  
 Project: 1940904, F&BI 010517  
 Date Extracted: 10/29/20  
 Date Analyzed: 10/30/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
DMW-14S-10 010517-01	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-14S-15 010517-02	<0.02	<0.02	<0.02	<0.06	<5	81
DMW-14S-20 010517-03	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-14S-20D 010517-04	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-14S-25 010517-05	<0.02	<0.02	<0.02	<0.06	<5	80
DMW-14S-30 010517-06	<0.02	<0.02	<0.02	<0.06	<5	79
DMW-14S-35 010517-07	<0.02	<0.02	<0.02	<0.06	<5	74
DMW-14S-40 010517-08	<0.02	<0.02	<0.02	<0.06	<5	78
DMW-14S-45 010517-09	<0.02	<0.02	<0.02	<0.06	<5	77
DMW-14S-50 010517-10	<0.02	<0.02	<0.02	<0.06	<5	68
Method Blank 00-2393 MB	<0.02	<0.02	<0.02	<0.06	<5	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20  
Date Received: 10/28/20  
Project: 1940904, F&BI 010517  
Date Extracted: 10/30/20  
Date Analyzed: 10/30/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
TRIP BLANK 10-28-2020 010517-11	<1	<1	<1	<3	77
Method Blank 00-2394 MB	<1	<1	<1	<3	75

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20  
 Date Received: 10/28/20  
 Project: 1940904, F&BI 010517  
 Date Extracted: 10/29/20  
 Date Analyzed: 10/29/20

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
 FOR TOTAL PETROLEUM HYDROCARBONS AS  
 DIESEL AND MOTOR OIL  
 USING METHOD NWTPH-D<sub>x</sub>**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 48-168)
DMW-14S-10 010517-01	<50	<250	98
DMW-14S-15 010517-02	<50	<250	90
DMW-14S-20 010517-03	<50	<250	90
DMW-14S-20D 010517-04	<50	<250	89
DMW-14S-25 010517-05	<50	<250	99
DMW-14S-30 010517-06	<50	<250	98
DMW-14S-35 010517-07	<50	<250	90
DMW-14S-40 010517-08	<50	<250	92
DMW-14S-45 010517-09	<50	<250	97
DMW-14S-50 010517-10	<50	<250	90
Method Blank 00-2445 MB	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-10	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-01 1/6
Date Analyzed:	10/29/20	Data File:	102915.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-15	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-02 1/6
Date Analyzed:	10/29/20	Data File:	102916.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-20	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-03 1/6
Date Analyzed:	10/29/20	Data File:	102920.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-20D	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-04 1/6
Date Analyzed:	10/29/20	Data File:	102921.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-25	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-05 1/6
Date Analyzed:	10/29/20	Data File:	102922.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-30	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-06 1/6
Date Analyzed:	10/29/20	Data File:	102923.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	79	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-35	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-07 1/6
Date Analyzed:	10/29/20	Data File:	102924.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	71	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-40	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-08 1/6
Date Analyzed:	10/29/20	Data File:	102925.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-45	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-09 1/6
Date Analyzed:	10/29/20	Data File:	102926.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	DMW-14S-50	Client:	Hart Crowser
Date Received:	10/28/20	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	010517-10 1/6
Date Analyzed:	10/29/20	Data File:	102927.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	79	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Hart Crowser
Date Received:	Not Applicable	Project:	1940904, F&BI 010517
Date Extracted:	10/29/20	Lab ID:	00-2447 mb 1/6
Date Analyzed:	10/29/20	Data File:	102911.D
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90	23	127

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02
Aroclor 1262	<0.02
Aroclor 1268	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20

Date Received: 10/28/20

Project: 1940904, F&BI 010517

**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: 010517-01 (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)	0.5	81	69-120
Toluene	mg/kg (ppm)	0.5	81	70-117
Ethylbenzene	mg/kg (ppm)	0.5	78	65-123
Xylenes	mg/kg (ppm)	1.5	80	66-120
Gasoline	mg/kg (ppm)	20	95	71-131

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20

Date Received: 10/28/20

Project: 1940904, F&BI 010517

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,  
AND XYLENES  
USING EPA METHOD 8021B**

Laboratory Code: 010515-01 (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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	97	65-118
Toluene	ug/L (ppb)	50	89	72-122
Ethylbenzene	ug/L (ppb)	50	88	73-126
Xylenes	ug/L (ppb)	150	87	74-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20

Date Received: 10/28/20

Project: 1940904, F&BI 010517

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 010517-02 (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	<50	88	88	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	74-139

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/03/20

Date Received: 10/28/20

Project: 1940904, F&BI 010517

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF SOIL SAMPLES FOR  
POLYCHLORINATED BIPHENYLS AS  
AROCLOR 1016/1260 BY EPA METHOD 8082A**

Laboratory Code: 010517-02 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	<0.02	81	81	29-125	0
Aroclor 1260	mg/kg (ppm)	0.25	<0.02	85	86	25-137	1

Laboratory Code: Laboratory Control Sample 1/6

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	100	55-137
Aroclor 1260	mg/kg (ppm)	0.25	104	51-150

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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.

010517

MARK.DABEL@HARTCROWSER.COM

MARISSA.GOODMAN@HARTCROWSER.COM

Report To

Company HART CROWSER

Address 3131 ELLIOT AVE #600

City, State, ZIP SEATTLE, WA

Phone \_\_\_\_\_ Email \_\_\_\_\_

### SAMPLE CHAIN OF CUSTODY

ME

10-28-20

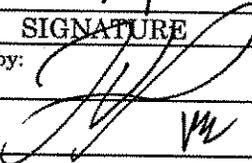
VS2 / 10/24/2001  
Page # \_\_\_\_\_ of \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME	
<input type="checkbox"/> Standard turnaround	<input checked="" type="checkbox"/> RUSH <u>72-HR</u>
Rush charges authorized by:	
SAMPLE DISPOSAL	
<input type="checkbox"/> Archive samples	<input type="checkbox"/> Other _____
Default: Dispose after 30 days	

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	
DMW-145-10	01 A-E	10/28/20	1000	SOIL	5	X	X	X				X	
DMW-145-15	02	10/28/20	1026	SOIL	5	X	X	X				X	
DMW-145-20	03	10/28/20	1034	SOIL	5	X	X	X				X	
DMW-145-20D	04	10/28/20	1037	SOIL	5	X	X	X				X	
DMW-145-25	05	10/28/20	1055	SOIL	5	X	X	X				X	
DMW-145-30	06	10/28/20	1105	SOIL	5	X	X	X				X	
DMW-145-35	07	10/28/20	1135	SOIL	5	X	X	X				X	
DMW-145-40	08	10/28/20	1140	SOIL	5	X	X	X				X	
DMW-145-45	09	10/28/20	1258	SOIL	5	X	X	X				X	
DMW-145-50	10	10/28/20	1304	SOIL	5	X	X	X				X	

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	JOSH VANDERWAL	HART CROWSER	10/28/20	1618
	Khoi Hoang	FBI	10/28/20	1618
Received by:		Samples received at <u>4</u> °C		

010517

MARK.DYBLO@HARTCROWSER.COM  
MAARISSA.GOODMAN@HARTCROWSER.COM

### SAMPLE CHAIN OF CUSTODY

M/S

10-28-20

VSD/DOY/VW1  
Page # 2 of 2

Report To \_\_\_\_\_

Company HART CROWSER

Address 3131 ELLIOT AVE #600

City, State, ZIP SEATTLE, WA

Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

TURNAROUND TIME
<input type="checkbox"/> Standard turnaround
<input checked="" type="checkbox"/> RUSH <u>72-HR</u>
Rush charges authorized by: _____
SAMPLE DISPOSAL
<input type="checkbox"/> Archive samples
<input type="checkbox"/> Other _____
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED								Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082			
TRIP BLANK 10-28-2020	11 A-B	10/28/20		WATER	2			X							

Friedman & Bruya, Inc.  
3012 16<sup>th</sup> Avenue West  
Seattle, WA 98119-2029  
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	JOSH VANDERWAL	HART CROWSER	10/28/20	16:18
Received by:	Khai Hoang	FBE	10/28/20	16:18
Relinquished by:				
Received by:		Samples received at <u>4</u> °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

November 6, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on November 2, 2020 from the 1940904, F&BI 011019 project. There are 7 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: Marissa Goodman  
HCR1106R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 2, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 011019 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
011019 -01	DMW-12S
011019 -02	DMW-9S
011019 -03	DMW-7S
011019 -04	DMW-8S
011019 -05	DMW-10S
011019 -06	DMW-11S
011019 -07	TRIP BLANK 11-2-2020

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/06/20  
 Date Received: 11/02/20  
 Project: 1940904, F&BI 011019  
 Date Extracted: 11/04/20  
 Date Analyzed: 11/04/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DMW-12S 011019-01	<1	<1	<1	<3	<100	78
DMW-9S 011019-02	<1	<1	<1	<3	<100	78
DMW-7S 011019-03	<1	<1	<1	<3	<100	78
DMW-8S 011019-04	<1	<1	<1	<3	<100	77
DMW-10S 011019-05	1.5	1.2	34	21	630	80
DMW-11S 011019-06	1.2	<1	7.9	6.3	270	79
Method Blank 00-2402 MB	<1	<1	<1	<3	<100	76

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/06/20  
Date Received: 11/02/20  
Project: 1940904, F&BI 011019  
Date Extracted: 11/04/20  
Date Analyzed: 11/04/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
TRIP BLANK 11-2-2020 011019-07	<1	<1	<1	<3	79
Method Blank 00-2402 MB	<1	<1	<1	<3	76

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/06/20  
Date Received: 11/02/20  
Project: 1940904, F&BI 011019  
Date Extracted: 11/03/20  
Date Analyzed: 11/03/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 41-152)
DMW-12S 011019-01	<50	<250	94
DMW-9S 011019-02	<50	<250	83
DMW-7S 011019-03	<50	<250	83
DMW-8S 011019-04	<50	<250	102
DMW-10S 011019-05	190 x	<250	103
DMW-11S 011019-06	210 x	<250	101
Method Blank 00-2465 MB	<50	<250	93

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 11/06/20

Date Received: 11/02/20

Project: 1940904, F&BI 011019

**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: 011007-01 (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	97	65-118
Toluene	ug/L (ppb)	50	90	72-122
Ethylbenzene	ug/L (ppb)	50	90	73-126
Xylenes	ug/L (ppb)	150	88	74-118
Gasoline	ug/L (ppb)	1,000	87	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/06/20

Date Received: 11/02/20

Project: 1940904, F&BI 011019

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	108	120	63-142	11

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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

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

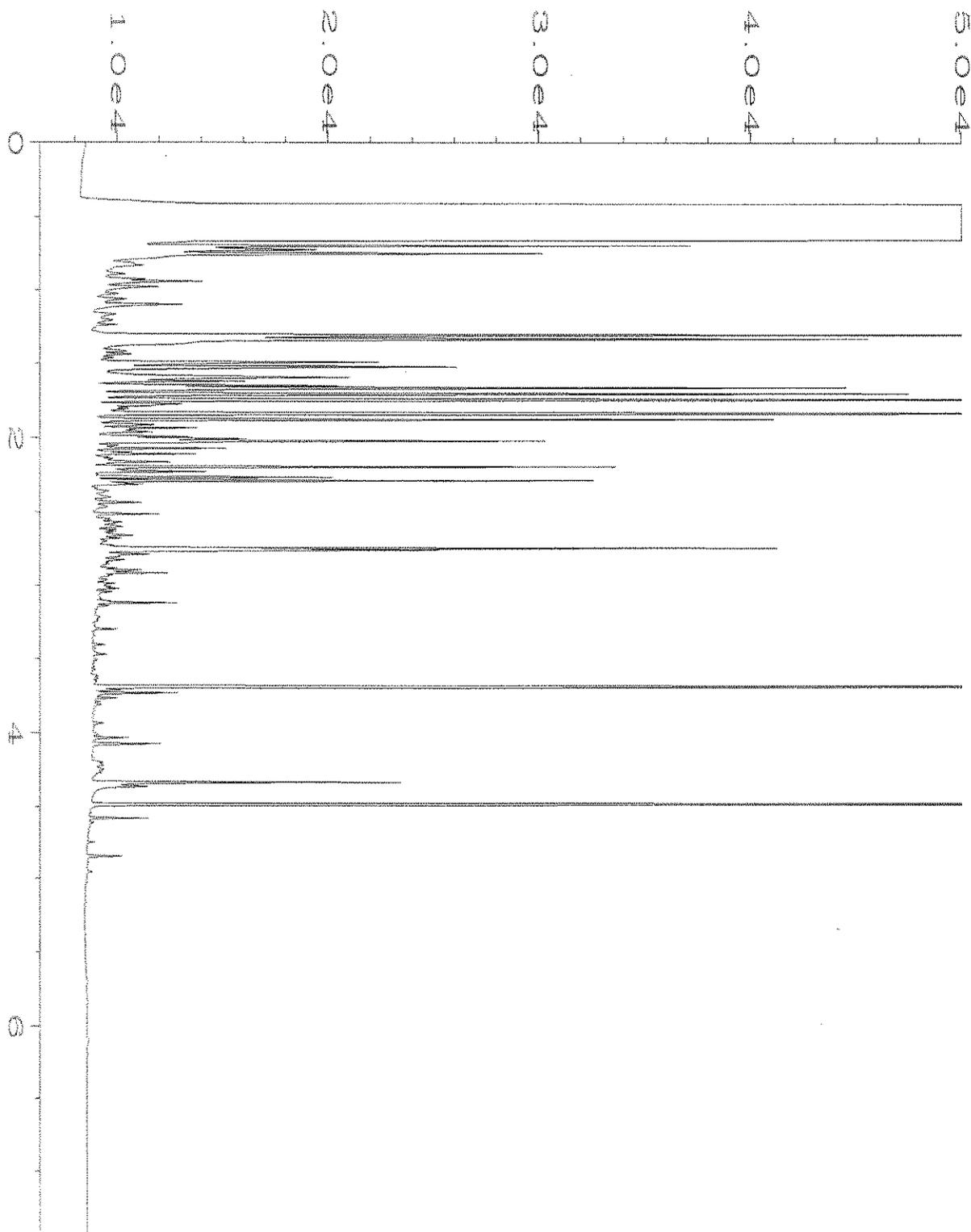
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

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.

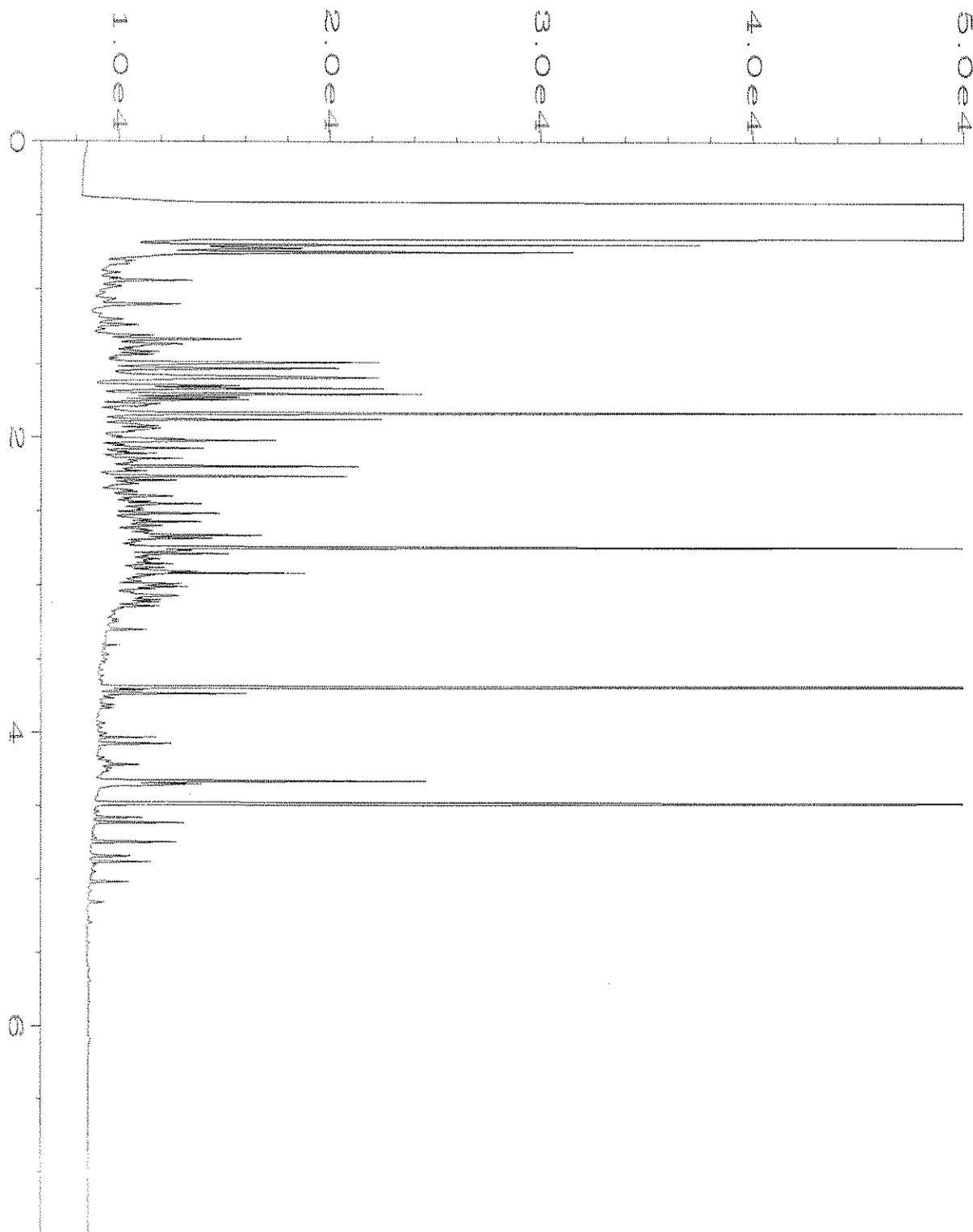
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

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

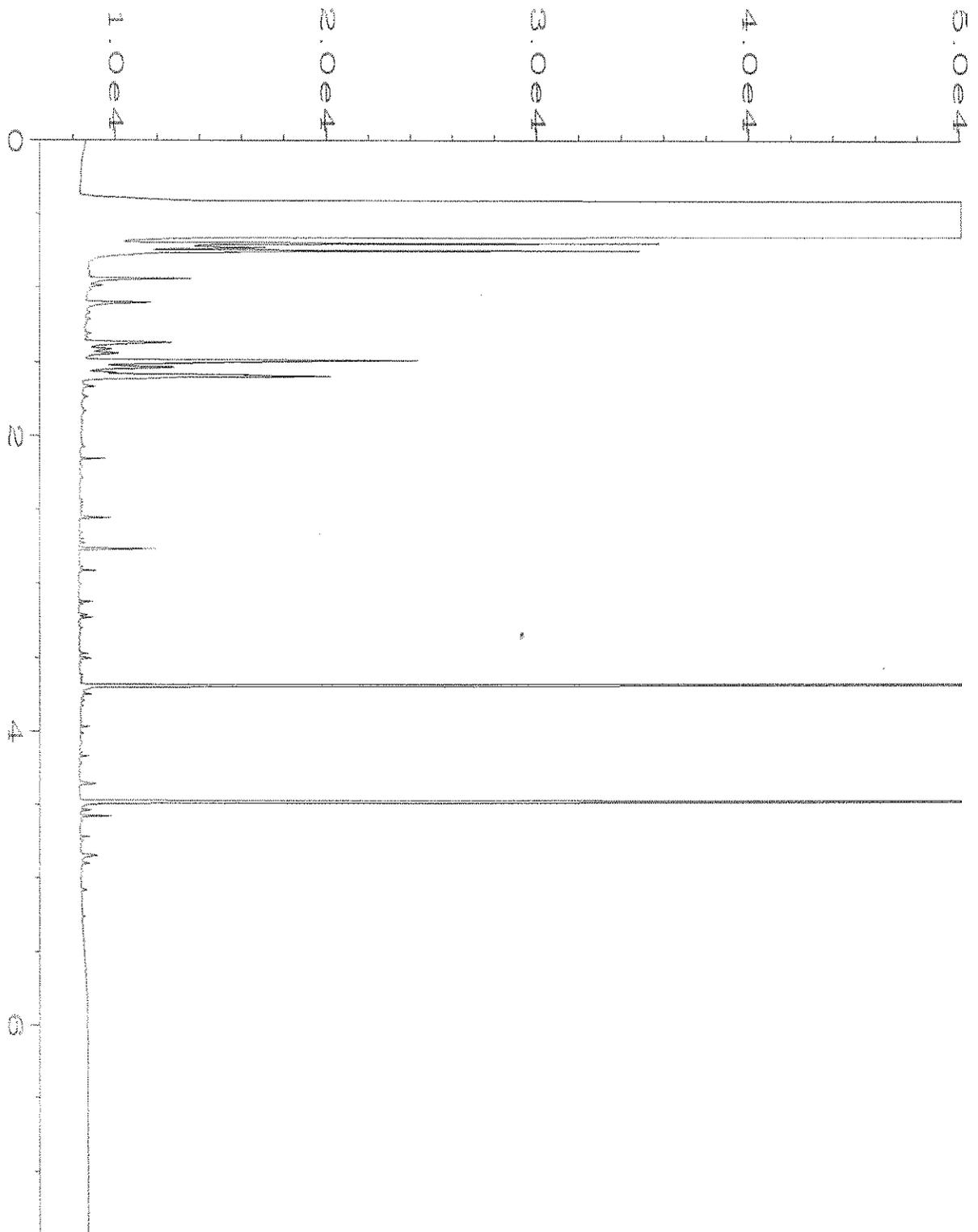
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



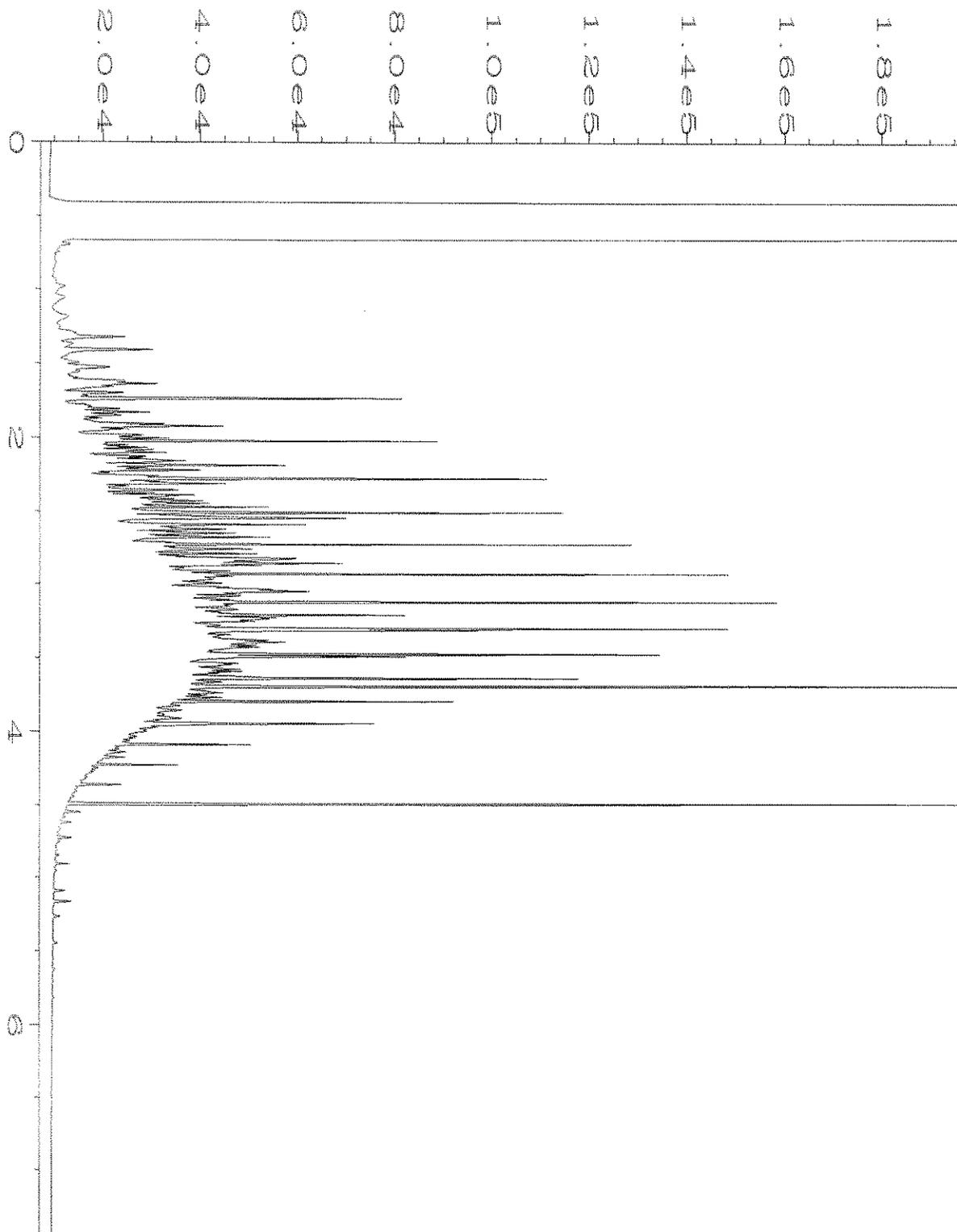
Data File Name	: C:\HPCHEM\1\DATA\11-03-20\037F0801.D	Page Number	: 1
Operator	: TL	Vial Number	: 37
Instrument	: GC1	Injection Number	: 1
Sample Name	: 011019-05	Sequence Line	: 8
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 03 Nov 20 03:27 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	04 Nov 20 09:50 AM		



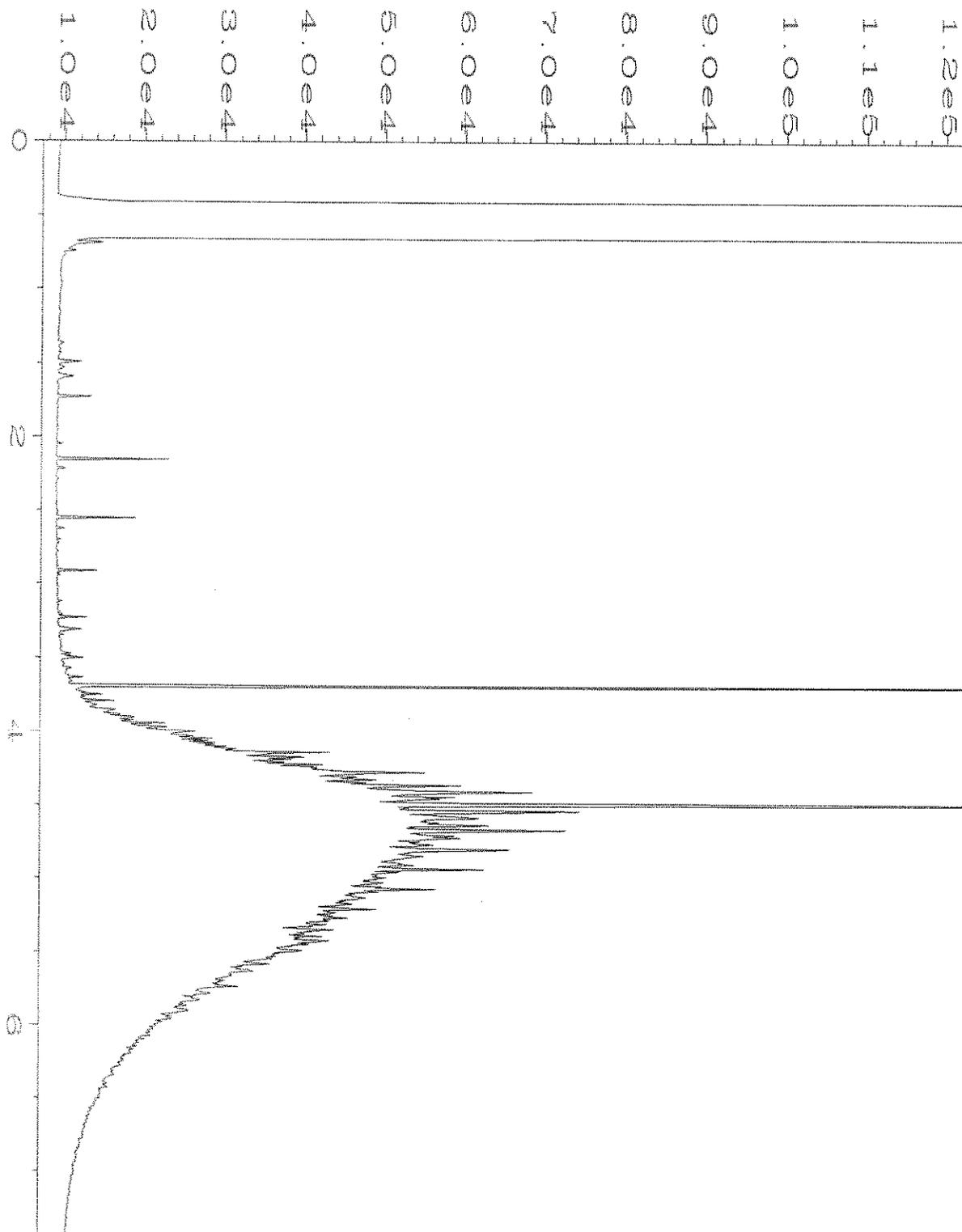
Data File Name	: C:\HPCHEM\1\DATA\11-03-20\038F0801.D	Page Number	: 1
Operator	: TL	Vial Number	: 38
Instrument	: GC1	Injection Number	: 1
Sample Name	: 011019-06	Sequence Line	: 8
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 03 Nov 20 03:39 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	04 Nov 20 09:51 AM		



Data File Name	: C:\HPCHEM\1\DATA\11-03-20\027F0701.D	Page Number	: 1
Operator	: TL	Vial Number	: 27
Instrument	: GC1	Injection Number	: 1
Sample Name	: 00-2465 mb	Sequence Line	: 7
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 03 Nov 20 02:07 PM	Analysis Method	: DEFAULT.MTH
Report Created on:	05 Nov 20 01:06 PM		



Data File Name	: C:\HPCHEM\1\DATA\11-03-20\003F0201.D	Page Number	: 1
Operator	: TL	Vial Number	: 3
Instrument	: GC1	Injection Number	: 1
Sample Name	: 500 Dx 61-146D	Sequence Line	: 2
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 03 Nov 20 06:04 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	05 Nov 20 01:05 PM		



Data File Name	: C:\HPCHEM\1\DATA\11-03-20\002F0201.D	Page Number	: 1
Operator	: TL	Vial Number	: 2
Instrument	: GC1	Injection Number	: 1
Sample Name	: 500 MO 61-114B	Sequence Line	: 2
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 03 Nov 20 05:52 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	05 Nov 20 01:05 PM		

011019

MARK DAGGER@HARTCROWSER.COM SAMPLE CHAIN OF CUSTODY

ME 11-02-20

VW3/E03

Report To MALISSA GOOPMAN@HARTCROWSER.COM

Company HART CROWSER

Address 3131 ELIOT AVE #600

City, State, ZIP SEATTLE, WA

Phone Email

SAMPLERS (signature)

PROJECT NAME 1940904 PO #

REMARKS INVOICE TO

Project specific RLs? - Yes / No

Page # 1 of 1

TURNAROUND TIME

Standard turnaround

RUSH 72-48

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										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DMW-12S	01A-D	11/2/2020	1426	WATER	4	X	X	X										
DMW-9S	02	11/2/2020	1143	WATER	4	X	X	X										
DMW-7S	03	11/2/2020	0956	WATER	4	X	X	X										
DMW-8S	04	11/2/2020	1029	WATER	4	X	X	X										
DMW-10S	05	11/2/2020	1259	WATER	4	X	X	X										
DMW-11S	06	11/2/2020	1452	WATER	4	X	X	X										
TRIP BLANK 11-2-2020	07A-B	11/2/2020		WATER	2			X										
Samples received at 4 °C																		

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	JOSH VANDERWAL	HART CROWSER	11/2/20	1607
	Khoi Hoang	FBI	11/2/20	16107
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

November 9, 2020

Mark Dagel, Project Manager  
Hart Crowser  
3131 Elliott Ave, Suite 600  
Seattle, WA 98121

Dear Mr Dagel:

Included are the results from the testing of material submitted on November 3, 2020 from the 1940904, F&BI 011044 project. There are 7 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: Marissa Goodman  
HCR1109R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 3, 2020 by Friedman & Bruya, Inc. from the Hart Crowser 1940904, F&BI 011044 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Hart Crowser</u>
011044 -01	HMW-21S
011044 -02	HMW-22S
011044 -03	DMW-13S
011044 -04	DMW-14S
011044 -05	TRIP BLANK 11-3-2020

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/09/20  
Date Received: 11/03/20  
Project: 1940904, F&BI 011044  
Date Extracted: 11/06/20  
Date Analyzed: 11/06/20

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DMW-13S 011044-03	<1	<1	<1	<3	<100	79
DMW-14S 011044-04	<1	<1	<1	<3	<100	78
Method Blank 00-2407 MB	<1	<1	<1	<3	<100	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/09/20  
Date Received: 11/03/20  
Project: 1940904, F&BI 011044  
Date Extracted: 11/06/20  
Date Analyzed: 11/06/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES  
USING METHOD 8021B**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Surrogate (% Recovery)</u> Limit (52-124)
TRIP BLANK 11-3-2020 011044-05	<1	<1	<1	<3	79
Method Blank 00-2407 MB	<1	<1	<1	<3	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/09/20  
Date Received: 11/03/20  
Project: 1940904, F&BI 011044  
Date Extracted: 11/04/20  
Date Analyzed: 11/04/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-D<sub>x</sub>**  
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> (% Recovery) (Limit 41-152)
HMW-21S 011044-01	<50	<250	87
HMW-22S 011044-02	62 x	<250	84
DMW-13S 011044-03	<50	<250	78
DMW-14S 011044-04	<50	<250	89
Method Blank 00-2465 MB2	<50	<250	85

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

Date of Report: 11/09/20

Date Received: 11/03/20

Project: 1940904, F&BI 011044

**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: 011044-03 (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	100	65-118
Toluene	ug/L (ppb)	50	93	72-122
Ethylbenzene	ug/L (ppb)	50	92	73-126
Xylenes	ug/L (ppb)	150	90	74-118
Gasoline	ug/L (ppb)	1,000	88	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/09/20

Date Received: 11/03/20

Project: 1940904, F&BI 011044

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

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	108	120	63-142	11

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **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. 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 lowest calibration standard. 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.

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

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

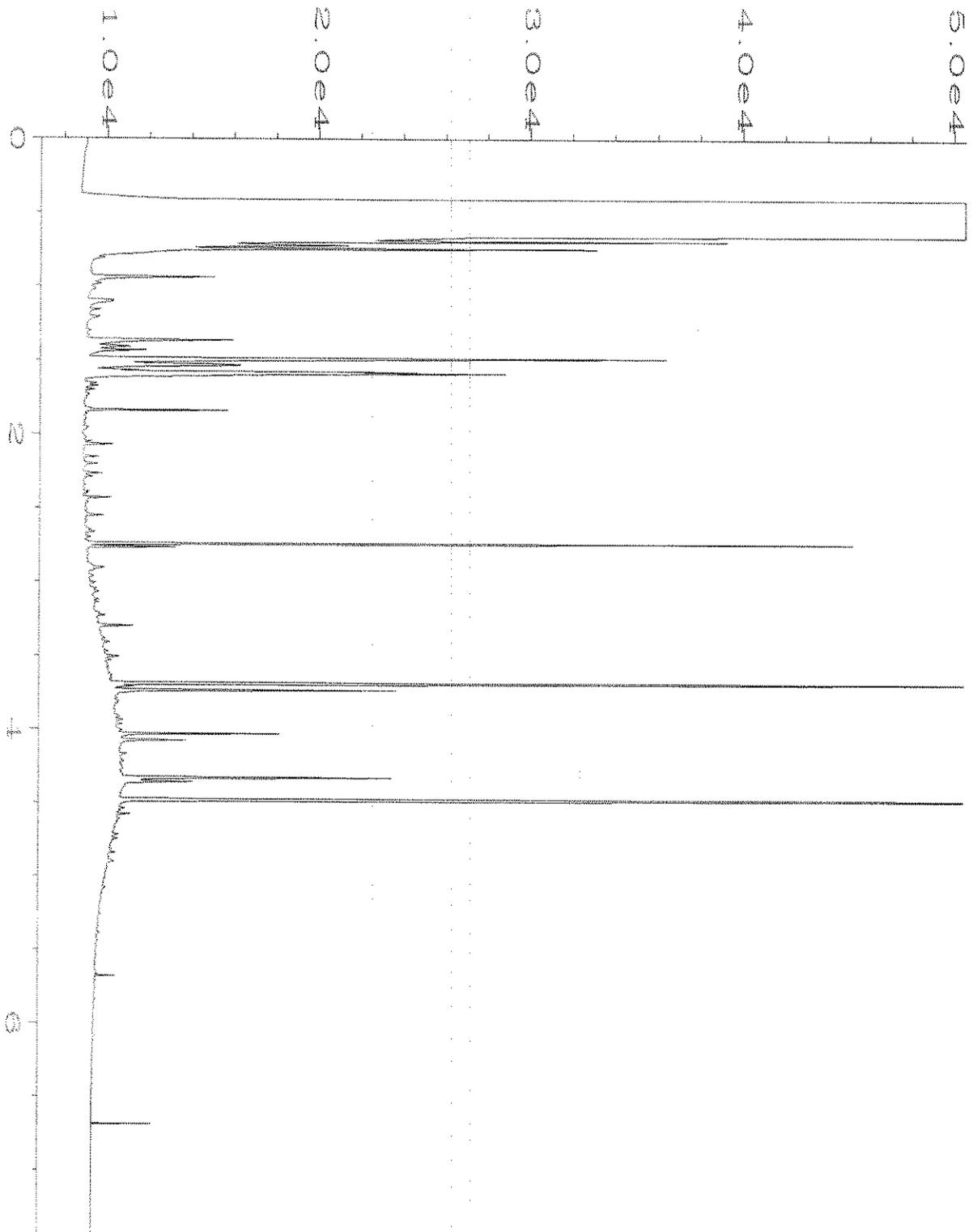
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

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.



Data File Name	: C:\HPCHEM\1\DATA\11-04-20\009F0301.D	Page Number	: 1
Operator	: TL	Vial Number	: 9
Instrument	: GC1	Injection Number	: 1
Sample Name	: 011044-02	Sequence Line	: 3
Run Time Bar Code:		Instrument Method:	DX.MTH
Acquired on	: 04 Nov 20 10:38 AM	Analysis Method	: DEFAULT.MTH
Report Created on:	05 Nov 20 10:15 AM		

011044

MARK. DABEL @ HART CROWSON.COM

SAMPLE CHAIN OF CUSTODY<sup>ME</sup>

11-03-20

VW2/E03

Report To MARISSA GOODMAN @ HART CROWSON.COM

Company 3131 ELLIOT AVE #600

Address \_\_\_\_\_

City, State, ZIP SEATTLE, WA

Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME <u>1940904</u>	PO #
REMARKS	INVOICE TO
Project specific RLs? - Yes / No	

Page # 1 of 1

**TURNAROUND TIME**  
 Standard turnaround  
 RUSH 72-HR  
 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							Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082		
HMW-215	01	11/3/2020	1013	WATER	1	X								
HMW-225	02	11/3/2020	1142	WATER	1	X								
DMW-135	03A-D	11/3/2020	1050	WATER	4	X	X	X						
DMW-145	04A-D	11/3/2020	1234	WATER	4	X	X	X						
TRIP BLANK 11-3-2020	05A-B	11/3/2020		WATER				X						

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	JOSH VANDERCAM	HART CROWSON	11/3/20	1350
	Ann Welover Bruya	P&B	11/3	1350
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				
Samples received at <u>2°C</u>				

**APPENDIX C2**  
**Laboratory Reports**  
**(Previous Investigations)**



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

**Shannon & Wilson**

Blaine Nesbit  
400 N. 34th Street, Suite 100  
Seattle, WA 98103

**RE: 615 Dexter Ave N Phase II**  
**Work Order Number: 1704275**

June 02, 2017

**Attention Blaine Nesbit:**

Fremont Analytical, Inc. received 9 sample(s) on 4/21/2017 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***  
***Dissolved Mercury by EPA Method 245.1***  
***Dissolved Metals by EPA Method 200.8***  
***Gasoline by NWTPH-Gx***  
***Mercury by EPA Method 245.1***  
***Mercury by EPA Method 7471***  
***Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)***  
***Sample Moisture (Percent Moisture)***  
***Semi-Volatile Organic Compounds by EPA Method 8270***  
***Total Metals by EPA Method 200.8***  
***Total Metals by EPA Method 6020***  
***Volatile Organic Compounds by EPA Method 8260C***

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,

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005  
ORELAP Certification: WA 100009-007 (NELAP Recognized)



Mike Ridgeway  
Laboratory Director

*DoD/ELAP Certification #L2371, ISO/IEC 17025:2005  
ORELAP Certification: WA 100009-007 (NELAP Recognized)*

**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Work Order:** 1704275

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1704275-001	21417-GP1:25	04/21/2017 12:40 PM	04/21/2017 4:24 PM
1704275-002	21417-GP2:18	04/21/2017 1:55 PM	04/21/2017 4:24 PM
1704275-003	21417-GP3:15.5	04/21/2017 8:20 AM	04/21/2017 4:24 PM
1704275-004	21417-GP4:12	04/21/2017 10:15 AM	04/21/2017 4:24 PM
1704275-005	21417-GP4:15	04/21/2017 10:25 AM	04/21/2017 4:24 PM
1704275-006	21417-GP1:GW	04/21/2017 12:30 PM	04/21/2017 4:24 PM
1704275-007	21417-GP3:GW	04/21/2017 9:10 AM	04/21/2017 4:24 PM
1704275-008	21417-GP4:GW	04/21/2017 10:40 AM	04/21/2017 4:24 PM
1704275-009	Trip Blank	04/20/2017 9:21 AM	04/21/2017 4:24 PM

**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

---

**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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 12:40:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-001

**Matrix:** Soil

**Client Sample ID:** 21417-GP1:25

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16866 Analyst: SB

Diesel (Fuel Oil)	ND	21.8		mg/Kg-dry	1	4/25/2017 10:04:03 PM
Heavy Oil	ND	54.5		mg/Kg-dry	1	4/25/2017 10:04:03 PM
Surr: 2-Fluorobiphenyl	132	50-150		%Rec	1	4/25/2017 10:04:03 PM
Surr: o-Terphenyl	139	50-150		%Rec	1	4/25/2017 10:04:03 PM

**Gasoline by NWTPH-Gx**

Batch ID: 16859 Analyst: NG

Gasoline	ND	4.58		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Surr: Toluene-d8	102	65-135		%Rec	1	4/25/2017 8:15:56 PM
Surr: 4-Bromofluorobenzene	97.8	65-135		%Rec	1	4/25/2017 8:15:56 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859 Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0550		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Chloromethane	ND	0.0550		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Vinyl chloride	ND	0.00183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Bromomethane	ND	0.0824		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Trichlorofluoromethane (CFC-11)	ND	0.0458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Chloroethane	ND	0.0550		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1-Dichloroethene	ND	0.0458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Methylene chloride	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
trans-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Methyl tert-butyl ether (MTBE)	ND	0.0458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1-Dichloroethane	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
2,2-Dichloropropane	ND	0.0458	Q	mg/Kg-dry	1	4/25/2017 8:15:56 PM
cis-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Chloroform	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1,1-Trichloroethane (TCA)	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1-Dichloropropene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Carbon tetrachloride	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2-Dichloroethane (EDC)	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Benzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Trichloroethene (TCE)	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2-Dichloropropane	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Bromodichloromethane	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Dibromomethane	ND	0.0366		mg/Kg-dry	1	4/25/2017 8:15:56 PM
cis-1,3-Dichloropropene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Toluene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
trans-1,3-Dichloropropylene	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 12:40:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-001

**Matrix:** Soil

**Client Sample ID:** 21417-GP1:25

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

1,1,2-Trichloroethane	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,3-Dichloropropane	ND	0.0458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Tetrachloroethene (PCE)	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Dibromochloromethane	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2-Dibromoethane (EDB)	ND	0.00458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Chlorobenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1,1,2-Tetrachloroethane	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Ethylbenzene	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
m,p-Xylene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
o-Xylene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Styrene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Isopropylbenzene	ND	0.0733		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Bromoform	ND	0.0183	Q	mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,1,2,2-Tetrachloroethane	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
n-Propylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Bromobenzene	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,3,5-Trimethylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
2-Chlorotoluene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
4-Chlorotoluene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
tert-Butylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2,3-Trichloropropane	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2,4-Trichlorobenzene	ND	0.0458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
sec-Butylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
4-Isopropyltoluene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,3-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,4-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
n-Butylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2-Dibromo-3-chloropropane	ND	0.458		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2,4-Trimethylbenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Hexachlorobutadiene	ND	0.0916		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Naphthalene	ND	0.0275		mg/Kg-dry	1	4/25/2017 8:15:56 PM
1,2,3-Trichlorobenzene	ND	0.0183		mg/Kg-dry	1	4/25/2017 8:15:56 PM
Surr: Dibromofluoromethane	87.8	56.5-129		%Rec	1	4/25/2017 8:15:56 PM
Surr: Toluene-d8	97.7	64.5-151		%Rec	1	4/25/2017 8:15:56 PM
Surr: 1-Bromo-4-fluorobenzene	95.4	63.1-141		%Rec	1	4/25/2017 8:15:56 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 12:40:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-001

**Matrix:** Soil

**Client Sample ID:** 21417-GP1:25

**Analyses**

**Result**

**RL**

**Qual**

**Units**

**DF**

**Date Analyzed**

**Sample Moisture (Percent Moisture)**

Batch ID: R35703

Analyst: BB

Percent Moisture

10.6

0.500

wt%

1

4/24/2017 11:52:44 AM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 1:55:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-002

**Matrix:** Soil

**Client Sample ID:** 21417-GP2:18

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16866

Analyst: SB

Diesel (Fuel Oil)	ND	18.8		mg/Kg-dry	1	4/25/2017 10:35:26 PM
Heavy Oil	ND	47.0		mg/Kg-dry	1	4/25/2017 10:35:26 PM
Surr: 2-Fluorobiphenyl	148	50-150		%Rec	1	4/25/2017 10:35:26 PM
Surr: o-Terphenyl	152	50-150	S	%Rec	1	4/25/2017 10:35:26 PM

**NOTES:**

S - Outlying surrogate recovery(ies) observed (high bias). Sample is non-detect; no further action required.

**Semi-Volatile Organic Compounds by EPA Method 8270**

Batch ID: 16888

Analyst: BT

Phenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Bis(2-chloroethyl) ether	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Chlorophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
1,3-Dichlorobenzene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
1,4-Dichlorobenzene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
1,2-Dichlorobenzene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benzyl alcohol	ND	94.3	Q	µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Methylphenol (o-cresol)	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Hexachloroethane	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
N-Nitrosodi-n-propylamine	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Nitrobenzene	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Isophorone	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
3&4-Methylphenol (m, p-cresol)	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Nitrophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4-Dimethylphenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Bis(2-chloroethoxy)methane	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4-Dichlorophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
1,2,4-Trichlorobenzene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Naphthalene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4-Chloroaniline	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Hexachlorobutadiene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4-Chloro-3-methylphenol	ND	189		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Methylnaphthalene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
1-Methylnaphthalene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Hexachlorocyclopentadiene	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4,6-Trichlorophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4,5-Trichlorophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Chloronaphthalene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2-Nitroaniline	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Acenaphthene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 1:55:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-002

**Matrix:** Soil

**Client Sample ID:** 21417-GP2:18

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Semi-Volatile Organic Compounds by EPA Method 8270**

Batch ID: 16888

Analyst: BT

Dimethylphthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,6-Dinitrotoluene	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Acenaphthylene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4-Dinitrophenol	ND	189		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Dibenzofuran	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
2,4-Dinitrotoluene	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4-Nitrophenol	ND	471		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Fluorene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4-Chlorophenyl phenyl ether	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Diethylphthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4,6-Dinitro-2-methylphenol	ND	189		µg/Kg-dry	1	4/26/2017 8:52:28 PM
4-Bromophenyl phenyl ether	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Hexachlorobenzene	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Pentachlorophenol	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Phenanthrene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Anthracene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Carbazole	ND	70.7		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Di-n-butylphthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Fluoranthene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Pyrene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Butyl Benzylphthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
bis(2-Ethylhexyl)adipate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benz (a) anthracene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Chrysene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
bis (2-Ethylhexyl) phthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Di-n-octyl phthalate	ND	94.3		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benzo (b) fluoranthene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benzo (k) fluoranthene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benzo (a) pyrene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Indeno (1,2,3-cd) pyrene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Dibenz (a,h) anthracene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Benzo (g,h,i) perylene	ND	47.1		µg/Kg-dry	1	4/26/2017 8:52:28 PM
Surr: 2,4,6-Tribromophenol	57.4	11.1-127		%Rec	1	4/26/2017 8:52:28 PM
Surr: 2-Fluorobiphenyl	45.8	15-123		%Rec	1	4/26/2017 8:52:28 PM
Surr: Nitrobenzene-d5	41.7	10-133		%Rec	1	4/26/2017 8:52:28 PM
Surr: Phenol-d6	64.5	11.6-133		%Rec	1	4/26/2017 8:52:28 PM
Surr: p-Terphenyl	83.9	26.7-159		%Rec	1	4/26/2017 8:52:28 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1704275-002  
**Client Sample ID:** 21417-GP2:18

**Collection Date:** 4/21/2017 1:55:00 PM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Semi-Volatile Organic Compounds by EPA Method 8270**

Batch ID: 16888 Analyst: BT

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

**Gasoline by NWTPH-Gx**

Batch ID: 16859 Analyst: NG

Gasoline	ND	3.80		mg/Kg-dry	1	4/25/2017 8:44:53 PM
Surr: Toluene-d8	103	65-135		%Rec	1	4/25/2017 8:44:53 PM
Surr: 4-Bromofluorobenzene	97.5	65-135		%Rec	1	4/25/2017 8:44:53 PM

**Mercury by EPA Method 7471**

Batch ID: 16881 Analyst: WF

Mercury	ND	0.271		mg/Kg-dry	1	4/26/2017 4:28:47 PM
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**Total Metals by EPA Method 6020**

Batch ID: 16855 Analyst: TN

Arsenic	1.99	0.0865		mg/Kg-dry	1	4/26/2017 11:48:02 AM
Barium	23.6	0.433		mg/Kg-dry	1	4/26/2017 11:48:02 AM
Cadmium	ND	0.173		mg/Kg-dry	1	4/26/2017 11:48:02 AM
Chromium	21.3	0.0865		mg/Kg-dry	1	4/26/2017 11:48:02 AM
Lead	1.08	0.173		mg/Kg-dry	1	4/25/2017 4:44:44 PM
Selenium	0.691	0.433		mg/Kg-dry	1	4/26/2017 11:48:02 AM
Silver	ND	0.0865		mg/Kg-dry	1	4/26/2017 11:48:02 AM

**Sample Moisture (Percent Moisture)**

Batch ID: R35703 Analyst: BB

Percent Moisture	9.71	0.500		wt%	1	4/24/2017 11:52:44 AM
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**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 8:20:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-003

**Matrix:** Soil

**Client Sample ID:** 21417-GP3:15.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Batch ID: 16867

Analyst: BT

Naphthalene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
2-Methylnaphthalene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
1-Methylnaphthalene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Acenaphthylene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Acenaphthene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Fluorene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Phenanthrene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Anthracene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Fluoranthene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Pyrene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Benz(a)anthracene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Chrysene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Benzo(b)fluoranthene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Benzo(k)fluoranthene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Benzo(a)pyrene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Indeno(1,2,3-cd)pyrene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Dibenz(a,h)anthracene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Benzo(g,h,i)perylene	ND	43.0		µg/Kg-dry	1	4/25/2017 9:42:51 PM
Surr: 2-Fluorobiphenyl	64.3	24.5-139		%Rec	1	4/25/2017 9:42:51 PM
Surr: Terphenyl-d14 (surr)	74.6	44.3-176		%Rec	1	4/25/2017 9:42:51 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0486		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Chloromethane	ND	0.0486		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Vinyl chloride	ND	0.00162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Bromomethane	ND	0.0729		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Trichlorofluoromethane (CFC-11)	ND	0.0405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Chloroethane	ND	0.0486		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1-Dichloroethene	ND	0.0405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Methylene chloride	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
trans-1,2-Dichloroethene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Methyl tert-butyl ether (MTBE)	ND	0.0405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1-Dichloroethane	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
2,2-Dichloropropane	ND	0.0405	Q	mg/Kg-dry	1	4/25/2017 9:13:49 PM
cis-1,2-Dichloroethene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Chloroform	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1,1-Trichloroethane (TCA)	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1-Dichloropropene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1704275-003  
**Client Sample ID:** 21417-GP3:15.5

**Collection Date:** 4/21/2017 8:20:00 AM

**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Carbon tetrachloride	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2-Dichloroethane (EDC)	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Benzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Trichloroethene (TCE)	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2-Dichloropropane	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Bromodichloromethane	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Dibromomethane	ND	0.0324		mg/Kg-dry	1	4/25/2017 9:13:49 PM
cis-1,3-Dichloropropene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Toluene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
trans-1,3-Dichloropropylene	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1,2-Trichloroethane	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,3-Dichloropropane	ND	0.0405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Tetrachloroethene (PCE)	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Dibromochloromethane	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2-Dibromoethane (EDB)	ND	0.00405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Chlorobenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1,1,2-Tetrachloroethane	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Ethylbenzene	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
m,p-Xylene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
o-Xylene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Styrene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Isopropylbenzene	ND	0.0648		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Bromoform	ND	0.0162	Q	mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,1,1,2,2-Tetrachloroethane	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
n-Propylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Bromobenzene	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,3,5-Trimethylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
2-Chlorotoluene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
4-Chlorotoluene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
tert-Butylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2,3-Trichloropropane	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2,4-Trichlorobenzene	ND	0.0405		mg/Kg-dry	1	4/25/2017 9:13:49 PM
sec-Butylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
4-Isopropyltoluene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,3-Dichlorobenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,4-Dichlorobenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
n-Butylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2-Dichlorobenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2-Dibromo-3-chloropropane	ND	0.405		mg/Kg-dry	1	4/25/2017 9:13:49 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 8:20:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-003

**Matrix:** Soil

**Client Sample ID:** 21417-GP3:15.5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

1,2,4-Trimethylbenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Hexachlorobutadiene	ND	0.0810		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Naphthalene	ND	0.0243		mg/Kg-dry	1	4/25/2017 9:13:49 PM
1,2,3-Trichlorobenzene	ND	0.0162		mg/Kg-dry	1	4/25/2017 9:13:49 PM
Surr: Dibromofluoromethane	87.7	56.5-129		%Rec	1	4/25/2017 9:13:49 PM
Surr: Toluene-d8	98.1	64.5-151		%Rec	1	4/25/2017 9:13:49 PM
Surr: 1-Bromo-4-fluorobenzene	93.8	63.1-141		%Rec	1	4/25/2017 9:13:49 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

**Sample Moisture (Percent Moisture)**

Batch ID: R35703

Analyst: BB

Percent Moisture	7.86	0.500		wt%	1	4/24/2017 11:52:44 AM
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**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:15:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16866

Analyst: SB

Diesel (Fuel Oil)	ND	21.2		mg/Kg-dry	1	4/25/2017 11:06:58 PM
Heavy Oil	ND	53.0		mg/Kg-dry	1	4/25/2017 11:06:58 PM
Surr: 2-Fluorobiphenyl	142	50-150		%Rec	1	4/25/2017 11:06:58 PM
Surr: o-Terphenyl	147	50-150		%Rec	1	4/25/2017 11:06:58 PM

**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Batch ID: 16867

Analyst: BT

Naphthalene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
2-Methylnaphthalene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
1-Methylnaphthalene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Acenaphthylene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Acenaphthene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Fluorene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Phenanthrene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Anthracene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Fluoranthene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Pyrene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Benz(a)anthracene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Chrysene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Benzo(b)fluoranthene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Benzo(k)fluoranthene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Benzo(a)pyrene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Indeno(1,2,3-cd)pyrene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Dibenz(a,h)anthracene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Benzo(g,h,i)perylene	ND	43.4		µg/Kg-dry	1	4/25/2017 10:04:02 PM
Surr: 2-Fluorobiphenyl	56.7	24.5-139		%Rec	1	4/25/2017 10:04:02 PM
Surr: Terphenyl-d14 (surr)	82.6	44.3-176		%Rec	1	4/25/2017 10:04:02 PM

**Gasoline by NWTPH-Gx**

Batch ID: 16859

Analyst: NG

Gasoline	14.6	4.98		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Surr: Toluene-d8	100	65-135		%Rec	1	4/25/2017 9:42:09 PM
Surr: 4-Bromofluorobenzene	101	65-135		%Rec	1	4/25/2017 9:42:09 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0598		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Chloromethane	ND	0.0598		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Vinyl chloride	ND	0.00199		mg/Kg-dry	1	4/25/2017 9:42:09 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:15:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Bromomethane	ND	0.0897		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Trichlorofluoromethane (CFC-11)	ND	0.0498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Chloroethane	ND	0.0598		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1-Dichloroethene	ND	0.0498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Methylene chloride	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
trans-1,2-Dichloroethene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Methyl tert-butyl ether (MTBE)	ND	0.0498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1-Dichloroethane	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
2,2-Dichloropropane	ND	0.0498	Q	mg/Kg-dry	1	4/25/2017 9:42:09 PM
cis-1,2-Dichloroethene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Chloroform	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1,1-Trichloroethane (TCA)	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1-Dichloropropene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Carbon tetrachloride	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2-Dichloroethane (EDC)	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Benzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Trichloroethene (TCE)	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2-Dichloropropane	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Bromodichloromethane	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Dibromomethane	ND	0.0399		mg/Kg-dry	1	4/25/2017 9:42:09 PM
cis-1,3-Dichloropropene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Toluene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
trans-1,3-Dichloropropylene	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1,2-Trichloroethane	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,3-Dichloropropane	ND	0.0498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Tetrachloroethene (PCE)	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Dibromochloromethane	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2-Dibromoethane (EDB)	ND	0.00498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Chlorobenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1,1,2-Tetrachloroethane	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Ethylbenzene	0.0414	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
m,p-Xylene	0.0607	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
o-Xylene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Styrene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Isopropylbenzene	ND	0.0797		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Bromoform	ND	0.0199	Q	mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,1,2,2-Tetrachloroethane	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
n-Propylbenzene	0.0368	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Bromobenzene	ND	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:15:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

1,3,5-Trimethylbenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
2-Chlorotoluene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
4-Chlorotoluene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
tert-Butylbenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2,3-Trichloropropane	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2,4-Trichlorobenzene	ND	0.0498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
sec-Butylbenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
4-Isopropyltoluene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,3-Dichlorobenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,4-Dichlorobenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
n-Butylbenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2-Dichlorobenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2-Dibromo-3-chloropropane	ND	0.498		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2,4-Trimethylbenzene	0.146	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Hexachlorobutadiene	ND	0.0996		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Naphthalene	0.106	0.0299		mg/Kg-dry	1	4/25/2017 9:42:09 PM
1,2,3-Trichlorobenzene	ND	0.0199		mg/Kg-dry	1	4/25/2017 9:42:09 PM
Surr: Dibromofluoromethane	85.6	56.5-129		%Rec	1	4/25/2017 9:42:09 PM
Surr: Toluene-d8	98.9	64.5-151		%Rec	1	4/25/2017 9:42:09 PM
Surr: 1-Bromo-4-fluorobenzene	98.4	63.1-141		%Rec	1	4/25/2017 9:42:09 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

**Sample Moisture (Percent Moisture)**

Batch ID: R35703

Analyst: BB

Percent Moisture	12.8	0.500		wt%	1	4/24/2017 11:52:44 AM
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**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:25:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-005

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:15

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16866

Analyst: SB

Diesel (Fuel Oil)	ND	20.9		mg/Kg-dry	1	4/25/2017 11:38:20 PM
Heavy Oil	ND	52.2		mg/Kg-dry	1	4/25/2017 11:38:20 PM
Surr: 2-Fluorobiphenyl	139	50-150		%Rec	1	4/25/2017 11:38:20 PM
Surr: o-Terphenyl	148	50-150		%Rec	1	4/25/2017 11:38:20 PM

**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Batch ID: 16867

Analyst: BT

Naphthalene	414	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
2-Methylnaphthalene	279	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
1-Methylnaphthalene	112	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Acenaphthylene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Acenaphthene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Fluorene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Phenanthrene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Anthracene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Fluoranthene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Pyrene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Benz(a)anthracene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Chrysene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Benzo(b)fluoranthene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Benzo(k)fluoranthene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Benzo(a)pyrene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Indeno(1,2,3-cd)pyrene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Dibenz(a,h)anthracene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Benzo(g,h,i)perylene	ND	39.1		µg/Kg-dry	1	4/25/2017 10:25:37 PM
Surr: 2-Fluorobiphenyl	71.7	24.5-139		%Rec	1	4/25/2017 10:25:37 PM
Surr: Terphenyl-d14 (surr)	73.4	44.3-176		%Rec	1	4/25/2017 10:25:37 PM

**Gasoline by NWTPH-Gx**

Batch ID: 16859

Analyst: NG

Gasoline	269	47.2	D	mg/Kg-dry	10	4/26/2017 2:12:45 PM
Surr: Toluene-d8	102	65-135		%Rec	1	4/25/2017 10:11:07 PM
Surr: 4-Bromofluorobenzene	115	65-135		%Rec	1	4/25/2017 10:11:07 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0566		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Chloromethane	ND	0.0566		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Vinyl chloride	ND	0.00189		mg/Kg-dry	1	4/25/2017 10:11:07 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:25:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-005

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:15

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

Bromomethane	ND	0.0849		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Trichlorofluoromethane (CFC-11)	ND	0.0472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Chloroethane	ND	0.0566		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1-Dichloroethene	ND	0.0472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Methylene chloride	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
trans-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Methyl tert-butyl ether (MTBE)	ND	0.0472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1-Dichloroethane	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
2,2-Dichloropropane	ND	0.0472	Q	mg/Kg-dry	1	4/25/2017 10:11:07 PM
cis-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Chloroform	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1,1-Trichloroethane (TCA)	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1-Dichloropropene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Carbon tetrachloride	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2-Dichloroethane (EDC)	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Benzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Trichloroethene (TCE)	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2-Dichloropropane	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Bromodichloromethane	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Dibromomethane	ND	0.0377		mg/Kg-dry	1	4/25/2017 10:11:07 PM
cis-1,3-Dichloropropene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Toluene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
trans-1,3-Dichloropropylene	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1,2-Trichloroethane	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,3-Dichloropropane	ND	0.0472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Tetrachloroethene (PCE)	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Dibromochloromethane	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2-Dibromoethane (EDB)	ND	0.00472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Chlorobenzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1,1,2-Tetrachloroethane	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Ethylbenzene	0.456	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
m,p-Xylene	0.381	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
o-Xylene	0.170	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Styrene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Isopropylbenzene	0.242	0.0755		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Bromoform	ND	0.0189	Q	mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,1,2,2-Tetrachloroethane	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
n-Propylbenzene	0.416	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Bromobenzene	ND	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:25:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-005

**Matrix:** Soil

**Client Sample ID:** 21417-GP4:15

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16859

Analyst: NG

1,3,5-Trimethylbenzene	0.741	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
2-Chlorotoluene	0.171	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
4-Chlorotoluene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
tert-Butylbenzene	0.0237	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2,3-Trichloropropane	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2,4-Trichlorobenzene	ND	0.0472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
sec-Butylbenzene	0.250	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
4-Isopropyltoluene	0.406	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,3-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,4-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
n-Butylbenzene	0.483	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2-Dibromo-3-chloropropane	ND	0.472		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2,4-Trimethylbenzene	1.61	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Hexachlorobutadiene	ND	0.0944		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Naphthalene	0.894	0.0283		mg/Kg-dry	1	4/25/2017 10:11:07 PM
1,2,3-Trichlorobenzene	ND	0.0189		mg/Kg-dry	1	4/25/2017 10:11:07 PM
Surr: Dibromofluoromethane	87.1	56.5-129		%Rec	1	4/25/2017 10:11:07 PM
Surr: Toluene-d8	111	64.5-151		%Rec	1	4/25/2017 10:11:07 PM
Surr: 1-Bromo-4-fluorobenzene	108	63.1-141		%Rec	1	4/25/2017 10:11:07 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

**Total Metals by EPA Method 6020**

Batch ID: 17190

Analyst: TN

Lead	1.49	0.164		mg/Kg-dry	1	5/30/2017 3:21:41 PM
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**Sample Moisture (Percent Moisture)**

Batch ID: R35703

Analyst: BB

Percent Moisture	5.57	0.500		wt%	1	4/24/2017 11:52:44 AM
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**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 12:30:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-006

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP1:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16871      Analyst: SB

Diesel (Fuel Oil)	ND	50.0		µg/L	1	4/26/2017 3:50:57 PM
Heavy Oil	ND	100		µg/L	1	4/26/2017 3:50:57 PM
Surr: 2-Fluorobiphenyl	82.5	50-150		%Rec	1	4/26/2017 3:50:57 PM
Surr: o-Terphenyl	80.1	50-150		%Rec	1	4/26/2017 3:50:57 PM

**Gasoline by NWTPH-Gx**

Batch ID: 16857      Analyst: NG

Gasoline	ND	50.0		µg/L	1	4/24/2017 4:13:37 PM
Surr: Toluene-d8	99.4	65-135		%Rec	1	4/24/2017 4:13:37 PM
Surr: 4-Bromofluorobenzene	97.8	65-135		%Rec	1	4/24/2017 4:13:37 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857      Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Chloromethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Vinyl chloride	ND	0.200		µg/L	1	4/24/2017 4:13:37 PM
Bromomethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Chloroethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Methylene chloride	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	4/24/2017 4:13:37 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Chloroform	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Carbon tetrachloride	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Benzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	4/24/2017 4:13:37 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Bromodichloromethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Dibromomethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Toluene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 12:30:00 PM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-006

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP1:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857

Analyst: NG

1,1,2-Trichloroethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Dibromochloromethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	4/24/2017 4:13:37 PM
Chlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Ethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
m,p-Xylene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
o-Xylene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Styrene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Isopropylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Bromoform	ND	1.00	Q	µg/L	1	4/24/2017 4:13:37 PM
1,1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
n-Propylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Bromobenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
2-Chlorotoluene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
4-Chlorotoluene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
tert-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	4/24/2017 4:13:37 PM
sec-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
n-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	4/24/2017 4:13:37 PM
Naphthalene	ND	1.00		µg/L	1	4/24/2017 4:13:37 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	4/24/2017 4:13:37 PM
Surr: Dibromofluoromethane	96.6	45.4-152		%Rec	1	4/24/2017 4:13:37 PM
Surr: Toluene-d8	98.7	40.1-139		%Rec	1	4/24/2017 4:13:37 PM
Surr: 1-Bromo-4-fluorobenzene	95.3	64.2-128		%Rec	1	4/24/2017 4:13:37 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 9:10:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-007

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP3:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 16871 Analyst: SB

Diesel (Fuel Oil)	ND	49.8		µg/L	1	4/26/2017 6:27:51 PM
Heavy Oil	ND	99.6		µg/L	1	4/26/2017 6:27:51 PM
Surr: 2-Fluorobiphenyl	77.0	50-150		%Rec	1	4/26/2017 6:27:51 PM
Surr: o-Terphenyl	75.5	50-150		%Rec	1	4/26/2017 6:27:51 PM

**Gasoline by NWTPH-Gx**

Batch ID: 16857 Analyst: NG

Gasoline	ND	50.0		µg/L	1	4/24/2017 4:42:53 PM
Surr: Toluene-d8	100	65-135		%Rec	1	4/24/2017 4:42:53 PM
Surr: 4-Bromofluorobenzene	99.8	65-135		%Rec	1	4/24/2017 4:42:53 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857 Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Chloromethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Vinyl chloride	ND	0.200		µg/L	1	4/24/2017 4:42:53 PM
Bromomethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Chloroethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Methylene chloride	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	4/24/2017 4:42:53 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Chloroform	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Carbon tetrachloride	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Benzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	4/24/2017 4:42:53 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Bromodichloromethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Dibromomethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Toluene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 9:10:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-007

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP3:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857

Analyst: NG

1,1,2-Trichloroethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Dibromochloromethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	4/24/2017 4:42:53 PM
Chlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Ethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
m,p-Xylene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
o-Xylene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Styrene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Isopropylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Bromoform	ND	1.00	Q	µg/L	1	4/24/2017 4:42:53 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
n-Propylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Bromobenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
2-Chlorotoluene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
4-Chlorotoluene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
tert-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	4/24/2017 4:42:53 PM
sec-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
n-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	4/24/2017 4:42:53 PM
Naphthalene	ND	1.00		µg/L	1	4/24/2017 4:42:53 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	4/24/2017 4:42:53 PM
Surr: Dibromofluoromethane	97.2	45.4-152		%Rec	1	4/24/2017 4:42:53 PM
Surr: Toluene-d8	98.7	40.1-139		%Rec	1	4/24/2017 4:42:53 PM
Surr: 1-Bromo-4-fluorobenzene	96.2	64.2-128		%Rec	1	4/24/2017 4:42:53 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 9:10:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-007

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP3:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Mercury by EPA Method 245.1**

Batch ID: 16858 Analyst: WF

Mercury	ND	0.100		µg/L	1	4/24/2017 3:54:55 PM
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**Dissolved Mercury by EPA Method 245.1**

Batch ID: 16910 Analyst: WF

Mercury	ND	0.100		µg/L	1	4/28/2017 3:27:43 PM
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**Dissolved Metals by EPA Method 200.8**

Batch ID: 16876 Analyst: TN

Antimony	0.700	0.200		µg/L	1	4/26/2017 1:32:44 PM
Arsenic	ND	1.00		µg/L	1	4/26/2017 1:32:44 PM
Beryllium	ND	0.200		µg/L	1	4/26/2017 1:32:44 PM
Cadmium	ND	0.200		µg/L	1	4/26/2017 1:32:44 PM
Chromium	ND	0.500		µg/L	1	4/26/2017 1:32:44 PM
Copper	ND	0.500		µg/L	1	4/26/2017 1:32:44 PM
Lead	ND	0.500		µg/L	1	4/26/2017 1:32:44 PM
Nickel	4.41	0.500		µg/L	1	4/26/2017 1:32:44 PM
Selenium	ND	1.00		µg/L	1	4/26/2017 1:32:44 PM
Silver	ND	0.200		µg/L	1	4/26/2017 1:32:44 PM
Thallium	ND	0.200		µg/L	1	4/26/2017 1:32:44 PM
Zinc	ND	1.50		µg/L	1	4/26/2017 1:32:44 PM

**Total Metals by EPA Method 200.8**

Batch ID: 16877 Analyst: TN

Antimony	0.252	0.200		µg/L	1	4/26/2017 2:45:14 PM
Arsenic	1.25	1.00		µg/L	1	4/26/2017 2:45:14 PM
Beryllium	ND	0.200		µg/L	1	4/26/2017 2:45:14 PM
Cadmium	ND	0.200		µg/L	1	4/26/2017 2:45:14 PM
Chromium	24.0	0.500		µg/L	1	4/26/2017 2:45:14 PM
Copper	9.86	0.500		µg/L	1	4/26/2017 2:45:14 PM
Lead	1.15	0.500		µg/L	1	4/26/2017 2:45:14 PM
Nickel	19.3	0.500		µg/L	1	4/26/2017 2:45:14 PM
Selenium	ND	1.00		µg/L	1	4/26/2017 2:45:14 PM
Silver	ND	0.200		µg/L	1	4/26/2017 2:45:14 PM
Thallium	ND	0.200		µg/L	1	4/26/2017 2:45:14 PM
Zinc	13.5	1.50		µg/L	1	4/26/2017 2:45:14 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:40:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-008

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP4:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: 16857

Analyst: NG

Gasoline	4,830	50.0	E	µg/L	1	4/24/2017 5:12:06 PM
Surr: Toluene-d8	101	65-135		%Rec	1	4/24/2017 5:12:06 PM
Surr: 4-Bromofluorobenzene	113	65-135		%Rec	1	4/24/2017 5:12:06 PM

**NOTES:**

E - Estimated value. The amount exceeds the linear working range of the instrument.  
Insufficient sample volume received to analyze at a dilution.

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Chloromethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Vinyl chloride	ND	0.200		µg/L	1	4/24/2017 5:12:06 PM
Bromomethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Chloroethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Methylene chloride	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
2,2-Dichloropropane	ND	2.00	Q	µg/L	1	4/24/2017 5:12:06 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Chloroform	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Carbon tetrachloride	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Benzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	4/24/2017 5:12:06 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Bromodichloromethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Dibromomethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Toluene	1.15	1.00		µg/L	1	4/24/2017 5:12:06 PM
trans-1,3-Dichloropropylene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Dibromochloromethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM



**Client:** Shannon & Wilson

**Collection Date:** 4/21/2017 10:40:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1704275-008

**Matrix:** Groundwater

**Client Sample ID:** 21417-GP4:GW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 16857

Analyst: NG

1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	4/24/2017 5:12:06 PM
Chlorobenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Ethylbenzene	94.3	1.00	E	µg/L	1	4/24/2017 5:12:06 PM
m,p-Xylene	124	1.00	E	µg/L	1	4/24/2017 5:12:06 PM
o-Xylene	6.77	1.00		µg/L	1	4/24/2017 5:12:06 PM
Styrene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
Isopropylbenzene	29.2	1.00		µg/L	1	4/24/2017 5:12:06 PM
Bromoform	ND	1.00	Q	µg/L	1	4/24/2017 5:12:06 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
n-Propylbenzene	33.0	1.00		µg/L	1	4/24/2017 5:12:06 PM
Bromobenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,3,5-Trimethylbenzene	60.0	1.00	E	µg/L	1	4/24/2017 5:12:06 PM
2-Chlorotoluene	13.7	1.00		µg/L	1	4/24/2017 5:12:06 PM
4-Chlorotoluene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
tert-Butylbenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	4/24/2017 5:12:06 PM
sec-Butylbenzene	10.6	1.00		µg/L	1	4/24/2017 5:12:06 PM
4-Isopropyltoluene	17.2	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
n-Butylbenzene	15.0	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	4/24/2017 5:12:06 PM
1,2,4-Trimethylbenzene	198	1.00	E	µg/L	1	4/24/2017 5:12:06 PM
Hexachloro-1,3-butadiene	ND	4.00		µg/L	1	4/24/2017 5:12:06 PM
Naphthalene	96.1	1.00	E	µg/L	1	4/24/2017 5:12:06 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	4/24/2017 5:12:06 PM
Surr: Dibromofluoromethane	98.4	45.4-152		%Rec	1	4/24/2017 5:12:06 PM
Surr: Toluene-d8	111	40.1-139		%Rec	1	4/24/2017 5:12:06 PM
Surr: 1-Bromo-4-fluorobenzene	111	64.2-128		%Rec	1	4/24/2017 5:12:06 PM

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

E - Estimated value. The amount exceeds the linear working range of the instrument.

Insufficient sample volume received to analyze at dilution.



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Metals by EPA Method 200.8**

Sample ID <b>MB-16865FB</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35753</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16876</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684859</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.200									
Arsenic	ND	1.00									
Beryllium	ND	0.200									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Selenium	ND	1.00									
Silver	ND	0.200									
Thallium	ND	0.200									
Zinc	ND	1.50									

**NOTES:**  
 Filter Blank

Sample ID <b>MB-16876</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35753</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16876</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684860</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.200									
Arsenic	ND	1.00									
Beryllium	ND	0.200									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Selenium	ND	1.00									
Silver	ND	0.200									
Thallium	ND	0.200									
Zinc	ND	1.50									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Metals by EPA Method 200.8**

Sample ID <b>MB-16876</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35753</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16876</b>	Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684860</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>LCS-16876</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35753</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16876</b>	Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684861</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	5.16	0.200	5.000	0	103	85	115				
Arsenic	100	1.00	100.0	0	100	85	115				
Beryllium	5.14	0.200	5.000	0	103	85	115				
Cadmium	4.89	0.200	5.000	0	97.8	85	115				
Chromium	98.3	0.500	100.0	0	98.3	85	115				
Copper	101	0.500	100.0	0	101	85	115				
Lead	47.6	0.500	50.00	0	95.3	85	115				
Nickel	101	0.500	100.0	0	101	85	115				
Selenium	9.46	1.00	10.00	0	94.6	85	115				
Silver	4.84	0.200	5.000	0	96.8	85	115				
Thallium	2.47	0.200	2.500	0	98.7	85	115				
Zinc	101	1.50	100.0	0	101	85	115				

Sample ID <b>1704275-007DDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35753</b>							
Client ID: <b>21417-GP3:GW</b>	Batch ID: <b>16876</b>	Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684863</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	0.545	0.200						0.7005	25.0	30	
Arsenic	ND	1.00						0		30	
Beryllium	ND	0.200						0		30	
Cadmium	ND	0.200						0		30	
Chromium	ND	0.500						0		30	
Copper	ND	0.500						0		30	
Lead	ND	0.500						0		30	
Nickel	4.26	0.500						4.410	3.58	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Metals by EPA Method 200.8**

Sample ID	<b>1704275-007DDUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35753</b>		
Client ID:	<b>21417-GP3:GW</b>	Batch ID:	<b>16876</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684863</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium	ND	1.00						0		30	
Silver	ND	0.200						0		30	
Thallium	ND	0.200						0		30	
Zinc	ND	1.50						0		30	

Sample ID	<b>1704275-007DMS</b>	SampType:	<b>MS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35753</b>		
Client ID:	<b>21417-GP3:GW</b>	Batch ID:	<b>16876</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684863</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	26.5	0.200	25.00	0.7005	103	70	130				
Arsenic	514	1.00	500.0	0	103	70	130				
Beryllium	24.4	0.200	25.00	0	97.6	70	130				
Cadmium	24.2	0.200	25.00	0.07550	96.6	70	130				
Chromium	487	0.500	500.0	0.09700	97.4	70	130				
Copper	487	0.500	500.0	0.2950	97.4	70	130				
Lead	234	0.500	250.0	0	93.5	70	130				
Nickel	496	0.500	500.0	4.410	98.3	70	130				
Selenium	49.0	1.00	50.00	0.1355	97.7	70	130				
Silver	23.1	0.200	25.00	0	92.5	70	130				
Thallium	12.1	0.200	12.50	0.006000	96.5	70	130				
Zinc	523	1.50	500.0	0	105	70	130				

Sample ID	<b>1704275-007DMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35753</b>		
Client ID:	<b>21417-GP3:GW</b>	Batch ID:	<b>16876</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684863</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	27.1	0.200	25.00	0.7005	106	70	130	26.46	2.31	30	
Arsenic	527	1.00	500.0	0	105	70	130	513.6	2.61	30	
Beryllium	25.2	0.200	25.00	0	101	70	130	24.40	3.20	30	
Cadmium	26.0	0.200	25.00	0.07550	104	70	130	24.24	6.85	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Metals by EPA Method 200.8**

Sample ID	<b>1704275-007DMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35753</b>		
Client ID:	<b>21417-GP3:GW</b>	Batch ID:	<b>16876</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684868</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	492	0.500	500.0	0.09700	98.5	70	130	487.0	1.11	30	
Copper	503	0.500	500.0	0.2950	100	70	130	487.4	3.05	30	
Lead	238	0.500	250.0	0	95.1	70	130	233.7	1.70	30	
Nickel	510	0.500	500.0	4.410	101	70	130	495.7	2.85	30	
Selenium	56.3	1.00	50.00	0.1355	112	70	130	48.99	13.8	30	
Silver	24.6	0.200	25.00	0	98.5	70	130	23.11	6.29	30	
Thallium	12.3	0.200	12.50	0.006000	98.0	70	130	12.07	1.56	30	
Zinc	555	1.50	500.0	0	111	70	130	523.2	5.81	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 200.8**

Sample ID <b>MB-16877</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35754</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16877</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684890</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.200									
Arsenic	ND	1.00									
Beryllium	ND	0.200									
Cadmium	ND	0.200									
Chromium	ND	0.500									
Copper	ND	0.500									
Lead	ND	0.500									
Nickel	ND	0.500									
Selenium	ND	1.00									
Silver	ND	0.200									
Thallium	ND	0.200									
Zinc	ND	1.50									

Sample ID <b>LCS-16877</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35754</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16877</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684891</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	5.43	0.200	5.000	0	109	85	115				
Arsenic	105	1.00	100.0	0	105	85	115				
Beryllium	5.06	0.200	5.000	0	101	85	115				
Cadmium	5.11	0.200	5.000	0	102	85	115				
Chromium	99.4	0.500	100.0	0	99.4	85	115				
Copper	104	0.500	100.0	0	104	85	115				
Lead	49.7	0.500	50.00	0	99.3	85	115				
Nickel	104	0.500	100.0	0	104	85	115				
Selenium	10.1	1.00	10.00	0	101	85	115				
Silver	4.78	0.200	5.000	0	95.6	85	115				
Thallium	2.54	0.200	2.500	0	102	85	115				
Zinc	108	1.50	100.0	0	108	85	115				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 200.8**

Sample ID	1704279-001ADUP	SampType:	DUP	Units:	µg/L	Prep Date:	4/26/2017	RunNo:	35754			
Client ID:	BATCH	Batch ID:	16877	Analysis Date:	4/26/2017	SeqNo:	684893					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Antimony	0.536	0.200						0.6910	25.2	30		
Arsenic	ND	1.00						0		30		
Beryllium	ND	0.200						0		30		
Cadmium	0.798	0.200						0.7885	1.13	30		
Chromium	2.00	0.500						4.291	72.7	30	R	
Copper	42.5	0.500						43.65	2.60	30		
Lead	72.5	0.500						72.31	0.270	30		
Nickel	50.0	0.500						50.38	0.842	30		
Selenium	ND	1.00						0		30		
Silver	ND	0.200						0		30		
Thallium	ND	0.200						0		30		
Zinc	3,090	1.50						3,146	1.66	30		

**NOTES:**

R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID	1704279-001AMS	SampType:	MS	Units:	µg/L	Prep Date:	4/26/2017	RunNo:	35754			
Client ID:	BATCH	Batch ID:	16877	Analysis Date:	4/26/2017	SeqNo:	684894					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Antimony	28.4	0.200	25.00	0.6910	111	70	130					
Arsenic	524	1.00	500.0	0.3175	105	70	130					
Beryllium	25.0	0.200	25.00	0.005500	100	70	130					
Cadmium	27.2	0.200	25.00	0.7885	106	70	130					
Chromium	502	0.500	500.0	4.291	99.5	70	130					
Copper	548	0.500	500.0	43.65	101	70	130					
Lead	312	0.500	250.0	72.31	95.8	70	130					
Nickel	562	0.500	500.0	50.38	102	70	130					
Selenium	48.6	1.00	50.00	0.6505	95.9	70	130					
Silver	17.7	0.200	25.00	0	70.6	70	130					
Thallium	12.5	0.200	12.50	0.01550	99.5	70	130					
Zinc	3,610	1.50	500.0	3,146	93.3	70	130					

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 200.8**

Sample ID <b>1704279-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35754</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16877</b>	Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684894</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>1704279-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35754</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16877</b>	Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684897</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	28.4	0.200	25.00	0.6910	111	70	130	28.42	0.0281	30	
Arsenic	518	1.00	500.0	0.3175	104	70	130	524.3	1.20	30	
Beryllium	26.6	0.200	25.00	0.005500	106	70	130	25.00	6.16	30	
Cadmium	27.7	0.200	25.00	0.7885	108	70	130	27.20	1.90	30	
Chromium	509	0.500	500.0	4.291	101	70	130	501.9	1.46	30	
Copper	565	0.500	500.0	43.65	104	70	130	547.9	3.03	30	
Lead	317	0.500	250.0	72.31	97.7	70	130	311.7	1.53	30	
Nickel	562	0.500	500.0	50.38	102	70	130	562.2	0.0587	30	
Selenium	49.6	1.00	50.00	0.6505	98.0	70	130	48.58	2.15	30	
Silver	16.9	0.200	25.00	0	67.6	70	130	17.66	4.37	30	S
Thallium	12.4	0.200	12.50	0.01550	99.4	70	130	12.46	0.104	30	
Zinc	3,960	1.50	500.0	3,146	162	70	130	3,613	9.06	30	S

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Mercury by EPA Method 245.1**

Sample ID <b>MB-16858</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35707</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16858</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683910</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.100

Sample ID <b>LCS-16858</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35707</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16858</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683911</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.32 0.100 2.500 0 92.8 85 115

Sample ID <b>1704232-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35707</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16858</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683913</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.100 0 20

Sample ID <b>1704232-001BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35707</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16858</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683914</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 3.42 0.100 2.500 0.02000 136 70 130 S

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID <b>1704232-001BMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35707</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16858</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683915</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.69 0.100 2.500 0.02000 107 70 130 3.420 23.9 20 R

**NOTES:**

R - High RPD observed, spike recoveries are within range.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Mercury by EPA Method 245.1**

Sample ID <b>MB-16910</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686075</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.100

Sample ID <b>LCS-16910</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686076</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.28 0.100 2.500 0 91.2 85 115

Sample ID <b>1704275-007DDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>21417-GP3:GW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686078</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.100 0 20

Sample ID <b>1704275-007DMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>21417-GP3:GW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686079</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.48 0.100 2.500 0 99.2 70 130

Sample ID <b>1704275-007DMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>21417-GP3:GW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686080</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.49 0.100 2.500 0 99.6 70 130 2.480 0.402 20



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Dissolved Mercury by EPA Method 245.1**

Sample ID <b>MB-16865FB</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/28/2017</b>	RunNo: <b>35811</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16910</b>	Analysis Date: <b>4/28/2017</b>	SeqNo: <b>686081</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.100

**NOTES:**  
Filter Blank

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID <b>MB-16855</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16855</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684412</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.156

Sample ID <b>LCS-16855</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>16855</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684413</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 19.6 0.157 19.69 0 99.3 80 120

Sample ID <b>1704272-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16855</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684415</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 4.75 0.171 3.541 29.1 20 R

**NOTES:**

R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID <b>1704272-001AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16855</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684417</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 23.5 0.171 21.33 3.541 93.5 75 125

Sample ID <b>1704272-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16855</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684420</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 23.0 0.171 21.33 3.541 91.1 75 125 23.49 2.20 20

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID <b>MB-16855</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16855</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684629</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0781									
Barium	ND	0.391									
Cadmium	ND	0.156									
Chromium	ND	0.0781									
Selenium	ND	0.391									
Silver	ND	0.0781									

Sample ID <b>1704272-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16855</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684632</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.90	0.0853						5.344	9.98	20	
Barium	76.5	0.427						69.06	10.3	20	
Cadmium	ND	0.171						0		20	
Chromium	56.7	0.0853						51.41	9.70	20	
Selenium	1.61	0.427						1.430	12.0	20	
Silver	ND	0.0853						0		20	

Sample ID <b>LCS-16855</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35734</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>16855</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684634</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	42.9	0.0787	39.37	0	109	80	120				
Barium	42.7	0.394	39.37	0	108	80	120				
Cadmium	2.05	0.157	1.969	0	104	80	120				
Chromium	41.8	0.0787	39.37	0	106	80	120				
Selenium	3.83	0.394	3.937	0	97.3	80	120				
Silver	1.61	0.0787	1.969	0	81.9	80	120				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID	<b>1704272-001AMS</b>	SampType:	<b>MS</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35734</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16855</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684637</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.6	0.0853	42.66	5.344	109	75	125				
Barium	137	0.427	42.66	69.06	160	75	125				S
Cadmium	2.66	0.171	2.133	0.1509	117	75	125				
Chromium	104	0.0853	42.66	51.41	123	75	125				
Selenium	5.55	0.427	4.266	1.430	96.6	75	125				
Silver	1.52	0.0853	2.133	0.06549	68.0	75	125				S

**NOTES:**

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

Sample ID	<b>1704272-001AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35734</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16855</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684638</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.9	0.0853	42.66	5.344	107	75	125	51.65	1.40	20	
Barium	132	0.427	42.66	69.06	148	75	125	137.4	3.92	20	S
Cadmium	2.64	0.171	2.133	0.1509	117	75	125	2.656	0.454	20	
Chromium	101	0.0853	42.66	51.41	116	75	125	103.9	2.92	20	
Selenium	5.45	0.427	4.266	1.430	94.1	75	125	5.551	1.91	20	
Silver	1.53	0.0853	2.133	0.06549	68.7	75	125	1.516	1.01	20	S

**NOTES:**

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

Sample ID	<b>1704272-001APDS</b>	SampType:	<b>PDS</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35734</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16855</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>684639</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	142	0.427	42.7	69.1	172	80	120				S
Silver	1.57	0.0853	2.13	0.0655	70.7	80	120				S

**NOTES:**

S - Spike recovery indicates a possible matrix effect. The method is in control as indicated by the Laboratory Control Sample (LCS).

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID <b>MB-17190</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36467</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17190</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699569</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.150

Sample ID <b>LCS-17190</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36467</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17190</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699570</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 20.2 0.153 19.08 0 106 80 120

Sample ID <b>1704275-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36467</b>							
Client ID: <b>21417-GP4:15</b>	Batch ID: <b>17190</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699572</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 1.40 0.164 1.490 5.98 20

Sample ID <b>1704275-005AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36467</b>							
Client ID: <b>21417-GP4:15</b>	Batch ID: <b>17190</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699574</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 19.7 0.164 20.52 1.490 88.5 75 125

Sample ID <b>1704275-005AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36467</b>							
Client ID: <b>21417-GP4:15</b>	Batch ID: <b>17190</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699575</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 19.8 0.164 20.52 1.490 89.1 75 125 19.66 0.599 20

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Mercury by EPA Method 7471**

Sample ID	<b>MB-16881</b>	SampType:	<b>MBLK</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35746</b>			
Client ID:	<b>MBLKS</b>	Batch ID:	<b>16881</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>685419</b>			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.0100

Sample ID	<b>LCS-16881</b>	SampType:	<b>LCS</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35746</b>			
Client ID:	<b>LCSS</b>	Batch ID:	<b>16881</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>685420</b>			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.501 0.250 0.5000 0 100 80 120

Sample ID	<b>1704275-002ADUP</b>	SampType:	<b>DUP</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35746</b>			
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16881</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>685422</b>			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.266 0 20

Sample ID	<b>1704275-002AMS</b>	SampType:	<b>MS</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35746</b>			
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16881</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>685423</b>			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.512 0.261 0.5224 0.007166 96.6 70 130

Sample ID	<b>1704275-002AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35746</b>			
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16881</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>685424</b>			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.526 0.271 0.5429 0.007166 95.5 70 130 0.5120 2.61 20

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID <b>MB-16866</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16866</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684740</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	24.1		20.00		120	50	150				
Surr: o-Terphenyl	27.5		20.00		137	50	150				

Sample ID <b>LCS-16866</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>16866</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684739</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	509	20.0	500.0	0	102	65	135				
Surr: 2-Fluorobiphenyl	33.7		20.00		168	50	150				S
Surr: o-Terphenyl	35.5		20.00		178	50	150				S

**NOTES:**  
S - Outlying surrogate recovery(ies) observed.

Sample ID <b>1704251-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16866</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684709</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	22.1						0		30	
Heavy Oil	ND	55.3						0		30	
Heavy Oil Range Organics (C24-37)	117	55.3						191.8	48.5	30	R
Surr: 2-Fluorobiphenyl	27.9		22.12		126	50	150		0		
Surr: o-Terphenyl	29.0		22.12		131	50	150		0		

**NOTES:**  
R - High RPD due to suspected sample inhomogeneity. The method is in control as indicated by the Laboratory Control Sample (LCS).  
Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID <b>1704251-001AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>16866</b>				Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684710</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	488	20.7	517.0	0	94.3	65	135				
Surr: 2-Fluorobiphenyl	32.3		20.68		156	50	150				S
Surr: o-Terphenyl	34.5		20.68		167	50	150				S

**NOTES:**  
S - Outlying surrogate recovery(ies) observed.

Sample ID <b>1704251-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>16866</b>				Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684711</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	554	21.5	537.0	0	103	65	135	487.6	12.7	30	
Surr: 2-Fluorobiphenyl	32.8		21.48		153	50	150		0		S
Surr: o-Terphenyl	35.0		21.48		163	50	150		0		S

**NOTES:**  
S - Outlying surrogate recovery(ies) observed.

Sample ID <b>1704275-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>4/25/2017</b>	RunNo: <b>35747</b>					
Client ID: <b>21417-GP4:15</b>	Batch ID: <b>16866</b>				Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684721</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.9						0		30	
Heavy Oil	ND	52.2						0		30	
Surr: 2-Fluorobiphenyl	29.2		20.87		140	50	150		0		
Surr: o-Terphenyl	29.3		20.87		140	50	150		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID <b>MB-16871</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35752</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16871</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684841</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	49.8									
Heavy Oil	ND	99.5									
Surr: 2-Fluorobiphenyl	68.4		79.62		85.9	50	150				
Surr: o-Terphenyl	76.0		79.62		95.4	50	150				

Sample ID <b>LCS-16871</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35752</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16871</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>684840</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	731	49.8	996.0	0	73.4	65	135				
Surr: 2-Fluorobiphenyl	66.0		79.68		82.8	50	150				
Surr: o-Terphenyl	73.8		79.68		92.6	50	150				

Sample ID <b>1704275-006BMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35752</b>							
Client ID: <b>21417-GP1:GW</b>	Batch ID: <b>16871</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>685390</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	374	49.9	997.6	6.929	36.8	65	135				S
Surr: 2-Fluorobiphenyl	66.7		79.81		83.6	50	150				
Surr: o-Terphenyl	44.1		79.81		55.2	50	150				

**NOTES:**

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

Sample ID <b>1704275-006BMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35752</b>							
Client ID: <b>21417-GP1:GW</b>	Batch ID: <b>16871</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>685391</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	367	49.9	997.6	6.929	36.1	65	135	373.6	1.68	30	S
Surr: 2-Fluorobiphenyl	59.3		79.81		74.3	50	150		0		
Surr: o-Terphenyl	43.5		79.81		54.6	50	150		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID	1704275-006BMSD	SampType:	MSD	Units:	µg/L	Prep Date:	4/25/2017	RunNo:	35752		
Client ID:	21417-GP1:GW	Batch ID:	16871	Analysis Date:	4/26/2017	SeqNo:	685391				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**NOTES:**

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

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>MB-16867</b>	SampType: <b>MBLK</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35788</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>16867</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>685567</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	40.0									
2-Methylnaphthalene	ND	40.0									
1-Methylnaphthalene	ND	40.0									
Acenaphthylene	ND	40.0									
Acenaphthene	ND	40.0									
Fluorene	ND	40.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	40.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	40.0									
Benzo(k)fluoranthene	ND	40.0									
Benzo(a)pyrene	ND	40.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	40.0									
Surr: 2-Fluorobiphenyl	443		500.0		88.6	24.5	139				
Surr: Terphenyl-d14 (surr)	503		500.0		101	44.3	176				

Sample ID <b>LCS-16867</b>	SampType: <b>LCS</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35788</b>
Client ID: <b>LCSS</b>	Batch ID: <b>16867</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>685568</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	764	40.0	1,000	0	76.4	46.4	125				
2-Methylnaphthalene	821	40.0	1,000	0	82.1	45.1	135				
1-Methylnaphthalene	784	40.0	1,000	0	78.4	46.2	133				
Acenaphthylene	800	40.0	1,000	0	80.0	32.8	136				
Acenaphthene	793	40.0	1,000	0	79.3	38.7	129				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID	<b>LCS-16867</b>	SampType:	<b>LCS</b>	Units:	<b>µg/Kg</b>	Prep Date:	<b>4/25/2017</b>	RunNo:	<b>35788</b>		
Client ID:	<b>LCSS</b>	Batch ID:	<b>16867</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>685568</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	791	40.0	1,000	0	79.1	41.4	144				
Phenanthrene	817	40.0	1,000	0	81.7	43.9	133				
Anthracene	812	40.0	1,000	0	81.2	44.2	136				
Fluoranthene	815	40.0	1,000	0	81.5	45.9	137				
Pyrene	810	40.0	1,000	0	81.0	46.2	137				
Benz(a)anthracene	835	40.0	1,000	0	83.5	41.9	136				
Chrysene	762	40.0	1,000	0	76.2	46.9	138				
Benzo(b)fluoranthene	858	40.0	1,000	0	85.8	41	155				
Benzo(k)fluoranthene	739	40.0	1,000	0	73.9	41.8	153				
Benzo(a)pyrene	811	40.0	1,000	0	81.1	34.3	157				
Indeno(1,2,3-cd)pyrene	791	40.0	1,000	0	79.1	31.3	159				
Dibenz(a,h)anthracene	816	40.0	1,000	0	81.6	28	158				
Benzo(g,h,i)perylene	802	40.0	1,000	0	80.2	32.4	144				
Surr: 2-Fluorobiphenyl	428		500.0		85.6	24.5	139				
Surr: Terphenyl-d14 (surr)	471		500.0		94.2	44.3	176				

Sample ID	<b>1704251-001ADUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/25/2017</b>	RunNo:	<b>35788</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16867</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>685572</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	41.9						0		30	
2-Methylnaphthalene	ND	41.9						0		30	
1-Methylnaphthalene	ND	41.9						0		30	
Acenaphthylene	59.0	41.9						45.35	26.1	30	
Acenaphthene	53.1	41.9						87.84	49.4	30	
Fluorene	45.1	41.9						55.25	20.2	30	
Phenanthrene	722	41.9						927.5	24.9	30	
Anthracene	163	41.9						204.0	22.4	30	
Fluoranthene	1,120	41.9						1,157	3.40	30	
Pyrene	1,350	41.9						1,324	1.85	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID	<b>1704251-001ADUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/25/2017</b>	RunNo:	<b>35788</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16867</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>685572</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	563	41.9						609.4	7.93	30	
Chrysene	546	41.9						515.9	5.58	30	
Benzo(b)fluoranthene	714	41.9						725.0	1.58	30	
Benzo(k)fluoranthene	204	41.9						224.4	9.53	30	
Benzo(a)pyrene	620	41.9						616.4	0.606	30	
Indeno(1,2,3-cd)pyrene	351	41.9						338.0	3.85	30	
Dibenz(a,h)anthracene	73.1	41.9						59.93	19.8	30	
Benzo(g,h,i)perylene	483	41.9						455.5	5.85	30	
Surr: 2-Fluorobiphenyl	356		523.8		68.0	24.5	139		0		
Surr: Terphenyl-d14 (surr)	354		523.8		67.7	44.3	176		0		

Sample ID	<b>1704251-001AMS</b>	SampType:	<b>MS</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/25/2017</b>	RunNo:	<b>35788</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16867</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>685573</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	763	43.1	1,077	19.63	69.0	42.9	138				
2-Methylnaphthalene	821	43.1	1,077	27.94	73.6	42.8	151				
1-Methylnaphthalene	784	43.1	1,077	11.04	71.8	41.6	148				
Acenaphthylene	812	43.1	1,077	45.35	71.2	32.6	160				
Acenaphthene	848	43.1	1,077	87.84	70.5	46.3	142				
Fluorene	813	43.1	1,077	55.25	70.4	43.4	153				
Phenanthrene	1,680	43.1	1,077	927.5	69.5	45.5	140				
Anthracene	952	43.1	1,077	204.0	69.4	32.6	160				
Fluoranthene	1,990	43.1	1,077	1,157	77.5	44.6	161				
Pyrene	2,260	43.1	1,077	1,324	87.3	48.3	158				
Benz(a)anthracene	1,380	43.1	1,077	609.4	71.2	57.5	169				
Chrysene	1,250	43.1	1,077	515.9	68.4	45.2	146				
Benzo(b)fluoranthene	1,600	43.1	1,077	725.0	81.5	42.2	168				
Benzo(k)fluoranthene	773	43.1	1,077	224.4	50.9	34.8	147				
Benzo(a)pyrene	1,350	43.1	1,077	616.4	68.2	34.4	179				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>1704251-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35788</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16867</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>685573</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	999	43.1	1,077	338.0	61.4	5	113				
Dibenz(a,h)anthracene	746	43.1	1,077	59.93	63.7	17.3	156				
Benzo(g,h,i)perylene	1,160	43.1	1,077	455.5	65.2	39.4	122				
Surr: 2-Fluorobiphenyl	431		538.6		80.1	24.5	139				
Surr: Terphenyl-d14 (surr)	411		538.6		76.3	44.3	176				

Sample ID <b>1704251-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/25/2017</b>	RunNo: <b>35788</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16867</b>	Analysis Date: <b>4/25/2017</b>	SeqNo: <b>685574</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	678	44.2	1,104	19.63	59.7	42.9	138	762.6	11.7	30	
2-Methylnaphthalene	735	44.2	1,104	27.94	64.1	42.8	151	821.1	11.0	30	
1-Methylnaphthalene	684	44.2	1,104	11.04	61.0	41.6	148	784.0	13.6	30	
Acenaphthylene	728	44.2	1,104	45.35	61.9	32.6	160	811.9	10.9	30	
Acenaphthene	734	44.2	1,104	87.84	58.5	46.3	142	847.6	14.4	30	
Fluorene	728	44.2	1,104	55.25	60.9	43.4	153	813.2	11.1	30	
Phenanthrene	1,230	44.2	1,104	927.5	27.4	45.5	140	1,676	30.7	30	RS
Anthracene	792	44.2	1,104	204.0	53.3	32.6	160	951.8	18.3	30	
Fluoranthene	1,420	44.2	1,104	1,157	24.0	44.6	161	1,992	33.4	30	RS
Pyrene	1,570	44.2	1,104	1,324	22.5	48.3	158	2,264	36.1	30	RS
Benz(a)anthracene	1,090	44.2	1,104	609.4	43.8	57.5	169	1,376	22.9	30	S
Chrysene	977	44.2	1,104	515.9	41.8	45.2	146	1,252	24.7	30	S
Benzo(b)fluoranthene	1,230	44.2	1,104	725.0	45.6	42.2	168	1,603	26.5	30	
Benzo(k)fluoranthene	703	44.2	1,104	224.4	43.4	34.8	147	773.1	9.49	30	
Benzo(a)pyrene	1,070	44.2	1,104	616.4	41.3	34.4	179	1,351	23.0	30	
Indeno(1,2,3-cd)pyrene	794	44.2	1,104	338.0	41.3	5	113	999.3	22.9	30	
Dibenz(a,h)anthracene	637	44.2	1,104	59.93	52.2	17.3	156	746.3	15.9	30	
Benzo(g,h,i)perylene	875	44.2	1,104	455.5	38.0	39.4	122	1,157	27.8	30	S
Surr: 2-Fluorobiphenyl	359		552.0		65.1	24.5	139		0		
Surr: Terphenyl-d14 (surr)	322		552.0		58.2	44.3	176		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

## QC SUMMARY REPORT

### Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)

Sample ID	<b>1704251-001AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/25/2017</b>	RunNo:	<b>35788</b>				
Client ID:	<b>BATCH</b>	Batch ID:	<b>16867</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>685574</b>				
Analyte		Result		RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.  
 R - High RPD observed. The method is in control as indicated by the LCS.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID	MB-16888	SampType:	MBLK	Units:	µg/Kg	Prep Date:	4/26/2017	RunNo:	35909		
Client ID:	MBLKS	Batch ID:	16888	Analysis Date:	4/26/2017	SeqNo:	687903				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	100									
Bis(2-chloroethyl) ether	ND	100									
2-Chlorophenol	ND	100									
1,3-Dichlorobenzene	ND	75.0									
1,4-Dichlorobenzene	ND	75.0									
1,2-Dichlorobenzene	ND	75.0									
Benzyl alcohol	ND	100									Q
2-Methylphenol (o-cresol)	ND	100									
Hexachloroethane	ND	100									
N-Nitrosodi-n-propylamine	ND	100									
Nitrobenzene	ND	100									
Isophorone	ND	100									
3&4-Methylphenol (m, p-cresol)	ND	100									
2-Nitrophenol	ND	100									
2,4-Dimethylphenol	ND	100									
Bis(2-chloroethoxy)methane	ND	75.0									
2,4-Dichlorophenol	ND	100									
1,2,4-Trichlorobenzene	ND	75.0									
Naphthalene	ND	50.0									
4-Chloroaniline	ND	75.0									
Hexachlorobutadiene	ND	75.0									
4-Chloro-3-methylphenol	ND	200									
2-Methylnaphthalene	ND	50.0									
1-Methylnaphthalene	ND	50.0									
Hexachlorocyclopentadiene	ND	100									
2,4,6-Trichlorophenol	ND	100									
2,4,5-Trichlorophenol	ND	100									
2-Chloronaphthalene	ND	75.0									
2-Nitroaniline	ND	100									
Acenaphthene	ND	50.0									
Dimethylphthalate	ND	100									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>MB-16888</b>	SampType: <b>MBLK</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687903</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,6-Dinitrotoluene	ND	100									
Acenaphthylene	ND	50.0									
2,4-Dinitrophenol	ND	200									
Dibenzofuran	ND	75.0									
2,4-Dinitrotoluene	ND	100									
4-Nitrophenol	ND	500									
Fluorene	ND	50.0									
4-Chlorophenyl phenyl ether	ND	75.0									
Diethylphthalate	ND	100									
4,6-Dinitro-2-methylphenol	ND	200									
4-Bromophenyl phenyl ether	ND	75.0									
Hexachlorobenzene	ND	75.0									
Pentachlorophenol	ND	100									
Phenanthrene	ND	50.0									
Anthracene	ND	50.0									
Carbazole	ND	75.0									
Di-n-butylphthalate	ND	100									
Fluoranthene	ND	50.0									
Pyrene	ND	50.0									
Butyl Benzylphthalate	ND	100									
bis(2-Ethylhexyl)adipate	ND	100									
Benz (a) anthracene	ND	50.0									
Chrysene	ND	50.0									
bis (2-Ethylhexyl) phthalate	ND	100									
Di-n-octyl phthalate	ND	100									
Benzo (b) fluoranthene	ND	50.0									
Benzo (k) fluoranthene	ND	50.0									
Benzo (a) pyrene	ND	50.0									
Indeno (1,2,3-cd) pyrene	ND	50.0									
Dibenz (a,h) anthracene	ND	50.0									
Benzo (g,h,i) perylene	ND	50.0									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID <b>MB-16888</b>	SampType: <b>MBLK</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687903</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	298		1,000		29.8	11.1	127				
Surr: 2-Fluorobiphenyl	343		500.0		68.7	15	123				
Surr: Nitrobenzene-d5	250		500.0		50.0	10	133				
Surr: Phenol-d6	696		1,000		69.6	11.6	133				
Surr: p-Terphenyl	432		500.0		86.5	26.7	159				

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID <b>LCS-16888</b>	SampType: <b>LCS</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687904</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	849	100	1,000	0	84.9	41.8	138				
Bis(2-chloroethyl) ether	827	100	1,000	0	82.7	49.8	141				
2-Chlorophenol	836	100	1,000	0	83.6	49.3	132				
1,3-Dichlorobenzene	795	75.0	1,000	0	79.5	42.6	139				
1,4-Dichlorobenzene	852	75.0	1,000	0	85.2	44.7	135				
1,2-Dichlorobenzene	830	75.0	1,000	0	83.0	45	138				
Benzyl alcohol	665	100	1,000	0	66.5	42.4	131				
2-Methylphenol (o-cresol)	858	100	1,000	0	85.8	47.2	134				
Hexachloroethane	825	100	1,000	0	82.5	25.4	144				
N-Nitrosodi-n-propylamine	823	100	1,000	0	82.3	39.8	135				
Nitrobenzene	835	100	1,000	0	83.5	50.3	136				
Isophorone	833	100	1,000	0	83.3	62.7	131				
3&4-Methylphenol (m, p-cresol)	413	100	500.0	0	82.6	57.4	131				
2-Nitrophenol	809	100	1,000	0	80.9	44.2	129				
2,4-Dimethylphenol	892	100	1,000	0	89.2	57.8	121				
Bis(2-chloroethoxy)methane	823	75.0	1,000	0	82.3	55.1	136				
2,4-Dichlorophenol	1,000	100	1,000	0	100	57.1	128				
1,2,4-Trichlorobenzene	847	75.0	1,000	0	84.7	36.2	140				
Naphthalene	829	50.0	1,000	0	82.9	52.9	131				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>LCS-16888</b>	SampType: <b>LCS</b>	Units: <b>µg/Kg</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>LCSS</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687904</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Chloroaniline	816	75.0	1,000	0	81.6	10.4	130				
Hexachlorobutadiene	864	75.0	1,000	0	86.4	55.9	131				
4-Chloro-3-methylphenol	892	200	1,000	0	89.2	49.4	138				
2-Methylnaphthalene	850	50.0	1,000	0	85.0	56.3	132				
1-Methylnaphthalene	831	50.0	1,000	0	83.1	56.4	132				
Hexachlorocyclopentadiene	818	100	1,000	0	81.8	21	130				
2,4,6-Trichlorophenol	729	100	1,000	0	72.9	36.4	132				
2,4,5-Trichlorophenol	829	100	1,000	0	82.9	34.6	133				
2-Chloronaphthalene	846	75.0	1,000	0	84.6	33	120				
2-Nitroaniline	805	100	1,000	0	80.5	43.9	135				
Acenaphthene	828	50.0	1,000	0	82.8	49.2	127				
Dimethylphthalate	929	100	1,000	0	92.9	43.9	126				
2,6-Dinitrotoluene	824	100	1,000	0	82.4	54.6	127				
Acenaphthylene	835	50.0	1,000	0	83.5	53.7	137				
2,4-Dinitrophenol	386	200	2,000	0	19.3	7.9	119				
Dibenzofuran	820	75.0	1,000	0	82.0	38.2	125				
2,4-Dinitrotoluene	830	100	1,000	0	83.0	21.9	136				
4-Nitrophenol	796	500	1,000	0	79.6	25.4	138				
Fluorene	816	50.0	1,000	0	81.6	64.8	126				
4-Chlorophenyl phenyl ether	840	75.0	1,000	0	84.0	66.6	124				
Diethylphthalate	880	100	1,000	0	88.0	42.9	132				
4,6-Dinitro-2-methylphenol	425	200	1,000	0	42.5	12.9	110				
4-Bromophenyl phenyl ether	815	75.0	1,000	0	81.5	61.8	128				
Hexachlorobenzene	829	75.0	1,000	0	82.9	56.7	131				
Pentachlorophenol	390	100	1,000	0	39.0	10	123				
Phenanthrene	830	50.0	1,000	0	83.0	61.2	130				
Anthracene	810	50.0	1,000	0	81.0	59.2	135				
Carbazole	831	75.0	1,000	0	83.1	37	148				
Di-n-butylphthalate	837	100	1,000	0	83.7	46.6	145				
Fluoranthene	823	50.0	1,000	0	82.3	66	129				
Pyrene	856	50.0	1,000	0	85.6	45.4	140				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID	LCS-16888	SampType:	LCS	Units:	µg/Kg	Prep Date:	4/26/2017	RunNo:	35909		
Client ID:	LCSS	Batch ID:	16888	Analysis Date:	4/26/2017	SeqNo:	687904				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Butyl Benzylphthalate	848	100	1,000	0	84.8	31.1	157				
bis(2-Ethylhexyl)adipate	740	100	1,000	0	74.0	28.7	160				
Benz (a) anthracene	859	50.0	1,000	0	85.9	44	150				
Chrysene	829	50.0	1,000	0	82.9	65.8	128				
bis (2-Ethylhexyl) phthalate	856	100	1,000	0	85.6	36.3	149				
Di-n-octyl phthalate	851	100	1,000	0	85.1	31.5	152				
Benzo (b) fluoranthene	846	50.0	1,000	0	84.6	45.6	146				
Benzo (k) fluoranthene	838	50.0	1,000	0	83.8	45.5	138				
Benzo (a) pyrene	843	50.0	1,000	0	84.3	35.6	148				
Indeno (1,2,3-cd) pyrene	870	50.0	1,000	0	87.0	44.2	146				
Dibenz (a,h) anthracene	855	50.0	1,000	0	85.5	37.5	152				
Benzo (g,h,i) perylene	836	50.0	1,000	0	83.6	24.1	156				
Surr: 2,4,6-Tribromophenol	763		1,000		76.3	11.1	127				
Surr: 2-Fluorobiphenyl	426		500.0		85.1	15	123				
Surr: Nitrobenzene-d5	335		500.0		67.0	10	133				
Surr: Phenol-d6	702		1,000		70.2	11.6	133				
Surr: p-Terphenyl	470		500.0		94.0	26.7	159				

Sample ID	1704275-002ADUP	SampType:	DUP	Units:	µg/Kg-dry	Prep Date:	4/26/2017	RunNo:	35909		
Client ID:	21417-GP2:18	Batch ID:	16888	Analysis Date:	4/26/2017	SeqNo:	687907				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	108						0		50	
Bis(2-chloroethyl) ether	ND	108						0		50	
2-Chlorophenol	ND	108						0		50	
1,3-Dichlorobenzene	ND	80.6						0		50	
1,4-Dichlorobenzene	ND	80.6						0		50	
1,2-Dichlorobenzene	ND	80.6						0		50	
Benzyl alcohol	ND	108						0		50	Q
2-Methylphenol (o-cresol)	ND	108						0		50	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>1704275-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687907</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachloroethane	ND	108						0		50	
N-Nitrosodi-n-propylamine	ND	108						0		50	
Nitrobenzene	ND	108						0		50	
Isophorone	ND	108						0		50	
3&4-Methylphenol (m, p-cresol)	ND	108						0		50	
2-Nitrophenol	ND	108						0		50	
2,4-Dimethylphenol	ND	108						0		50	
Bis(2-chloroethoxy)methane	ND	80.6						0		50	
2,4-Dichlorophenol	ND	108						0		50	
1,2,4-Trichlorobenzene	ND	80.6						0		50	
Naphthalene	ND	53.8						0		50	
4-Chloroaniline	ND	80.6						0		50	
Hexachlorobutadiene	ND	80.6						0		50	
4-Chloro-3-methylphenol	ND	215						0		50	
2-Methylnaphthalene	ND	53.8						0		50	
1-Methylnaphthalene	ND	53.8						0		50	
Hexachlorocyclopentadiene	ND	108						0		50	
2,4,6-Trichlorophenol	ND	108						0		50	
2,4,5-Trichlorophenol	ND	108						0		50	
2-Chloronaphthalene	ND	80.6						0		50	
2-Nitroaniline	ND	108						0		50	
Acenaphthene	ND	53.8						0		50	
Dimethylphthalate	ND	108						0		50	
2,6-Dinitrotoluene	ND	108						0		50	
Acenaphthylene	ND	53.8						0		50	
2,4-Dinitrophenol	ND	215						0		50	
Dibenzofuran	ND	80.6						0		50	
2,4-Dinitrotoluene	ND	108						0		50	
4-Nitrophenol	ND	538						0		50	
Fluorene	ND	53.8						0		50	
4-Chlorophenyl phenyl ether	ND	80.6						0		50	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>1704275-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687907</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diethylphthalate	ND	108						0		50	
4,6-Dinitro-2-methylphenol	ND	215						0		50	
4-Bromophenyl phenyl ether	ND	80.6						0		50	
Hexachlorobenzene	ND	80.6						0		50	
Pentachlorophenol	ND	108						0		50	
Phenanthrene	ND	53.8						0		50	
Anthracene	ND	53.8						0		50	
Carbazole	ND	80.6						0		50	
Di-n-butylphthalate	ND	108						0		50	
Fluoranthene	ND	53.8						0		50	
Pyrene	ND	53.8						0		50	
Butyl Benzylphthalate	ND	108						0		50	
bis(2-Ethylhexyl)adipate	ND	108						0		50	
Benz (a) anthracene	ND	53.8						0		50	
Chrysene	ND	53.8						0		50	
bis (2-Ethylhexyl) phthalate	ND	108						0		50	
Di-n-octyl phthalate	ND	108						0		50	
Benzo (b) fluoranthene	ND	53.8						0		50	
Benzo (k) fluoranthene	ND	53.8						0		50	
Benzo (a) pyrene	ND	53.8						0		50	
Indeno (1,2,3-cd) pyrene	ND	53.8						0		50	
Dibenz (a,h) anthracene	ND	53.8						0		50	
Benzo (g,h,i) perylene	ND	53.8						0		50	
Surr: 2,4,6-Tribromophenol	644		1,075		59.9	11.1	127		0		
Surr: 2-Fluorobiphenyl	271		537.6		50.5	15	123		0		
Surr: Nitrobenzene-d5	203		537.6		37.7	10	133		0		
Surr: Phenol-d6	697		1,075		64.8	11.6	133		0		
Surr: p-Terphenyl	450		537.6		83.6	26.7	159		0		

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>1704275-002AMS</b>	SampType: <b>MS</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687908</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	751	99.9	998.6	0	75.2	29.2	146				
Bis(2-chloroethyl) ether	765	99.9	998.6	0	76.6	34.4	135				
2-Chlorophenol	764	99.9	998.6	0	76.5	44	134				
1,3-Dichlorobenzene	702	74.9	998.6	0	70.3	21.1	133				
1,4-Dichlorobenzene	731	74.9	998.6	0	73.2	20.9	131				
1,2-Dichlorobenzene	744	74.9	998.6	0	74.5	35	131				
Benzyl alcohol	419	99.9	998.6	0	42.0	30.8	159				
2-Methylphenol (o-cresol)	753	99.9	998.6	0	75.4	39.9	125				
Hexachloroethane	708	99.9	998.6	0	70.9	15.4	139				
N-Nitrosodi-n-propylamine	757	99.9	998.6	0	75.8	26.4	151				
Nitrobenzene	729	99.9	998.6	0	73.0	61.4	130				
Isophorone	771	99.9	998.6	4.122	76.8	61.8	132				
3&4-Methylphenol (m, p-cresol)	361	99.9	499.3	0	72.3	37.6	125				
2-Nitrophenol	740	99.9	998.6	0	74.1	33.5	132				
2,4-Dimethylphenol	821	99.9	998.6	0	82.3	46	158				
Bis(2-chloroethoxy)methane	753	74.9	998.6	0	75.4	46.8	121				
2,4-Dichlorophenol	851	99.9	998.6	0	85.2	33.9	133				
1,2,4-Trichlorobenzene	743	74.9	998.6	0	74.4	29.2	140				
Naphthalene	710	49.9	998.6	0	71.1	44.4	136				
4-Chloroaniline	666	74.9	998.6	0	66.7	27	126				
Hexachlorobutadiene	731	74.9	998.6	0	73.2	38.2	138				
4-Chloro-3-methylphenol	745	200	998.6	0	74.6	36.8	159				
2-Methylnaphthalene	738	49.9	998.6	0	73.9	51.7	138				
1-Methylnaphthalene	738	49.9	998.6	0	73.9	51.8	131				
Hexachlorocyclopentadiene	709	99.9	998.6	0	71.0	10	133				
2,4,6-Trichlorophenol	670	99.9	998.6	0	67.1	34.6	129				
2,4,5-Trichlorophenol	742	99.9	998.6	0	74.3	54.7	127				
2-Chloronaphthalene	723	74.9	998.6	0	72.4	42.1	124				
2-Nitroaniline	718	99.9	998.6	0	71.9	39.3	145				
Acenaphthene	749	49.9	998.6	0	75.0	49.6	129				
Dimethylphthalate	833	99.9	998.6	86.12	74.8	32.9	137				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>1704275-002AMS</b>	SampType: <b>MS</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687908</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,6-Dinitrotoluene	760	99.9	998.6	0	76.1	30.3	136				
Acenaphthylene	742	49.9	998.6	0	74.3	39.9	129				
2,4-Dinitrophenol	1,130	200	1,997	0	56.5	10	149				
Dibenzofuran	720	74.9	998.6	0	72.1	41.2	128				
2,4-Dinitrotoluene	748	99.9	998.6	0	74.9	30.9	139				
4-Nitrophenol	670	499	998.6	0	67.1	15.6	160				
Fluorene	729	49.9	998.6	0	73.0	37.7	133				
4-Chlorophenyl phenyl ether	711	74.9	998.6	0	71.2	70.9	128				
Diethylphthalate	803	99.9	998.6	63.79	74.0	36.7	130				
4,6-Dinitro-2-methylphenol	635	200	998.6	0	63.5	21.9	143				
4-Bromophenyl phenyl ether	731	74.9	998.6	0	73.2	69.6	136				
Hexachlorobenzene	736	74.9	998.6	0	73.7	34.3	131				
Pentachlorophenol	605	99.9	998.6	0	60.6	28.2	156				
Phenanthrene	744	49.9	998.6	0	74.5	32.2	139				
Anthracene	735	49.9	998.6	0	73.6	43.9	128				
Carbazole	744	74.9	998.6	0	74.5	64.1	152				
Di-n-butylphthalate	764	99.9	998.6	16.48	74.9	35.1	142				
Fluoranthene	762	49.9	998.6	0	76.3	33.8	141				
Pyrene	773	49.9	998.6	0	77.4	31.4	151				
Butyl Benzylphthalate	669	99.9	998.6	0	67.0	30.4	138				
bis(2-Ethylhexyl)adipate	600	99.9	998.6	0	60.1	32	136				
Benz (a) anthracene	792	49.9	998.6	3.521	78.9	36	138				
Chrysene	768	49.9	998.6	0	76.9	41.6	125				
bis (2-Ethylhexyl) phthalate	667	99.9	998.6	0	66.7	40.8	170				
Di-n-octyl phthalate	660	99.9	998.6	0	66.1	34.6	142				
Benzo (b) fluoranthene	831	49.9	998.6	0	83.3	52.1	136				
Benzo (k) fluoranthene	741	49.9	998.6	0	74.2	45	140				
Benzo (a) pyrene	734	49.9	998.6	0	73.5	50.5	137				
Indeno (1,2,3-cd) pyrene	822	49.9	998.6	8.597	81.5	38.1	155				
Dibenz (a,h) anthracene	831	49.9	998.6	10.86	82.1	40.7	152				
Benzo (g,h,i) perylene	797	49.9	998.6	7.364	79.1	34	157				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID	<b>1704275-002AMS</b>	SampType:	<b>MS</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35909</b>		
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16888</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>687908</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	759		998.6		76.0	11.1	127				
Surr: 2-Fluorobiphenyl	337		499.3		67.4	15	123				
Surr: Nitrobenzene-d5	289		499.3		57.8	10	133				
Surr: Phenol-d6	670		998.6		67.1	11.6	133				
Surr: p-Terphenyl	418		499.3		83.8	26.7	159				

Sample ID	<b>1704275-002AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35909</b>		
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16888</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>687909</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	897	108	1,078	0	83.2	29.2	146	750.8	17.7	50	
Bis(2-chloroethyl) ether	880	108	1,078	0	81.6	34.4	135	764.8	14.0	50	
2-Chlorophenol	895	108	1,078	0	83.0	44	134	764.2	15.8	50	
1,3-Dichlorobenzene	853	80.9	1,078	0	79.1	21.1	133	701.7	19.4	50	
1,4-Dichlorobenzene	881	80.9	1,078	0	81.7	20.9	131	730.9	18.6	50	
1,2-Dichlorobenzene	902	80.9	1,078	0	83.7	35	131	744.1	19.2	50	
Benzyl alcohol	478	108	1,078	0	44.3	30.8	159	419.2	13.1	50	
2-Methylphenol (o-cresol)	964	108	1,078	0	89.4	39.9	125	752.7	24.6	50	
Hexachloroethane	854	108	1,078	0	79.2	15.4	139	708.3	18.6	50	
N-Nitrosodi-n-propylamine	908	108	1,078	0	84.2	26.4	151	757.1	18.1	50	
Nitrobenzene	888	108	1,078	0	82.4	61.4	130	728.8	19.7	50	
Isophorone	921	108	1,078	4.122	85.0	61.8	132	770.9	17.7	50	
3&4-Methylphenol (m, p-cresol)	442	108	539.2	0	82.0	37.6	125	361.1	20.2	50	
2-Nitrophenol	926	108	1,078	0	85.8	33.5	132	739.8	22.3	50	
2,4-Dimethylphenol	951	108	1,078	0	88.2	46	158	821.4	14.6	50	
Bis(2-chloroethoxy)methane	916	80.9	1,078	0	85.0	46.8	121	753.4	19.5	50	
2,4-Dichlorophenol	1,100	108	1,078	0	102	33.9	133	850.8	25.8	50	
1,2,4-Trichlorobenzene	876	80.9	1,078	0	81.2	29.2	140	743.1	16.4	50	
Naphthalene	894	53.9	1,078	0	82.9	44.4	136	709.7	22.9	50	
4-Chloroaniline	767	80.9	1,078	0	71.1	27	126	665.8	14.1	50	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID: <b>1704275-002AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>4/26/2017</b>	RunNo: <b>35909</b>
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16888</b>		Analysis Date: <b>4/26/2017</b>	SeqNo: <b>687909</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobutadiene	905	80.9	1,078	0	83.9	38.2	138	731.2	21.3	50	
4-Chloro-3-methylphenol	976	216	1,078	0	90.5	36.8	159	745.2	26.8	50	R
2-Methylnaphthalene	913	53.9	1,078	0	84.7	51.7	138	738.3	21.2	50	
1-Methylnaphthalene	912	53.9	1,078	0	84.5	51.8	131	738.4	21.0	50	
Hexachlorocyclopentadiene	887	108	1,078	0	82.2	10	133	709.0	22.3	50	
2,4,6-Trichlorophenol	919	108	1,078	0	85.2	34.6	129	670.0	31.3	50	
2,4,5-Trichlorophenol	900	108	1,078	0	83.5	54.7	127	742.2	19.2	50	
2-Chloronaphthalene	884	80.9	1,078	0	82.0	42.1	124	723.0	20.1	50	
2-Nitroaniline	902	108	1,078	0	83.6	39.3	145	717.8	22.7	50	
Acenaphthene	916	53.9	1,078	0	84.9	49.6	129	748.6	20.1	50	
Dimethylphthalate	1,010	108	1,078	86.12	86.0	32.9	137	833.5	19.5	50	
2,6-Dinitrotoluene	929	108	1,078	0	86.1	30.3	136	759.7	20.0	50	
Acenaphthylene	914	53.9	1,078	0	84.7	39.9	129	742.4	20.7	50	
2,4-Dinitrophenol	1,200	216	2,157	0	55.7	10	149	1,128	6.30	50	
Dibenzofuran	902	80.9	1,078	0	83.7	41.2	128	720.4	22.4	50	
2,4-Dinitrotoluene	903	108	1,078	0	83.8	30.9	139	748.0	18.8	50	
4-Nitrophenol	849	539	1,078	0	78.8	15.6	160	670.1	23.6	50	
Fluorene	904	53.9	1,078	0	83.9	37.7	133	729.1	21.5	50	
4-Chlorophenyl phenyl ether	904	80.9	1,078	0	83.8	70.9	128	711.3	23.9	50	
Diethylphthalate	961	108	1,078	63.79	83.2	36.7	130	802.7	18.0	50	
4,6-Dinitro-2-methylphenol	756	216	1,078	0	70.1	21.9	143	634.5	17.5	50	
4-Bromophenyl phenyl ether	874	80.9	1,078	0	81.1	69.6	136	730.7	17.9	50	
Hexachlorobenzene	926	80.9	1,078	0	85.8	34.3	131	736.1	22.8	50	
Pentachlorophenol	703	108	1,078	0	65.2	28.2	156	604.9	15.0	50	
Phenanthrene	879	53.9	1,078	0	81.5	32.2	139	743.9	16.6	50	
Anthracene	887	53.9	1,078	0	82.2	43.9	128	735.2	18.7	50	
Carbazole	888	80.9	1,078	0	82.3	64.1	152	744.4	17.6	50	
Di-n-butylphthalate	918	108	1,078	16.48	83.6	35.1	142	764.4	18.3	50	
Fluoranthene	917	53.9	1,078	0	85.0	33.8	141	762.4	18.4	50	
Pyrene	912	53.9	1,078	0	84.6	31.4	151	773.1	16.5	50	
Butyl Benzylphthalate	812	108	1,078	0	75.3	30.4	138	669.0	19.3	50	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Semi-Volatile Organic Compounds by EPA Method 8270**

Sample ID	<b>1704275-002AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>4/26/2017</b>	RunNo:	<b>35909</b>
Client ID:	<b>21417-GP2:18</b>	Batch ID:	<b>16888</b>			Analysis Date:	<b>4/26/2017</b>	SeqNo:	<b>687909</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
bis(2-Ethylhexyl)adipate	707	108	1,078	0	65.5	32	136	599.7	16.4	50	
Benz (a) anthracene	892	53.9	1,078	3.521	82.4	36	138	791.5	12.0	50	
Chrysene	928	53.9	1,078	0	86.1	41.6	125	768.4	18.8	50	
bis (2-Ethylhexyl) phthalate	756	108	1,078	0	70.1	40.8	170	666.5	12.6	50	
Di-n-octyl phthalate	755	108	1,078	0	70.0	34.6	142	660.3	13.3	50	
Benzo (b) fluoranthene	893	53.9	1,078	0	82.8	52.1	136	831.5	7.12	50	
Benzo (k) fluoranthene	954	53.9	1,078	0	88.4	45	140	740.7	25.1	50	
Benzo (a) pyrene	905	53.9	1,078	0	83.9	50.5	137	733.8	20.9	50	
Indeno (1,2,3-cd) pyrene	921	53.9	1,078	8.597	84.6	38.1	155	822.0	11.4	50	
Dibenz (a,h) anthracene	919	53.9	1,078	10.86	84.2	40.7	152	830.7	10.1	50	
Benzo (g,h,i) perylene	894	53.9	1,078	7.364	82.2	34	157	796.9	11.5	50	
Surr: 2,4,6-Tribromophenol	920		1,078		85.4	11.1	127		0		
Surr: 2-Fluorobiphenyl	409		539.2		75.9	15	123		0		
Surr: Nitrobenzene-d5	327		539.2		60.7	10	133		0		
Surr: Phenol-d6	742		1,078		68.8	11.6	133		0		
Surr: p-Terphenyl	494		539.2		91.7	26.7	159		0		

**NOTES:**

R - High RPD observed, spike recoveries are within range.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID	<b>LCS-16859</b>	SampType:	<b>LCS</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35745</b>		
Client ID:	<b>LCSS</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684760</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	22.2	5.00	25.00	0	88.9	65	135				
Surr: Toluene-d8	1.24		1.250		99.3	65	135				
Surr: 4-Bromofluorobenzene	1.32		1.250		106	65	135				

Sample ID	<b>MB-16859</b>	SampType:	<b>MBLK</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35745</b>		
Client ID:	<b>MBLKS</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684761</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.26		1.250		101	65	135				
Surr: 4-Bromofluorobenzene	1.25		1.250		99.9	65	135				

Sample ID	<b>1704274-001BDUP</b>	SampType:	<b>DUP</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35745</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684743</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	19.6	6.46						16.52	17.3	30	
Surr: Toluene-d8	1.62		1.614		100	65	135		0		
Surr: 4-Bromofluorobenzene	1.63		1.614		101	65	135		0		

Sample ID	<b>1704274-004BDUP</b>	SampType:	<b>DUP</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35745</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684746</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	4.73						0		30	
Surr: Toluene-d8	1.20		1.183		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.15		1.183		97.4	65	135		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID: <b>1704275-002BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35745</b>							
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684752</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	15.3	3.80	19.01	0	80.6	65	135				
Surr: Toluene-d8	0.952		0.9503		100	65	135				
Surr: 4-Bromofluorobenzene	0.962		0.9503		101	65	135				

Sample ID: <b>1704275-002BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35745</b>							
Client ID: <b>21417-GP2:18</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684753</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	11.7	3.80	19.01	0	61.8	65	135	15.32	26.4	30	S
Surr: Toluene-d8	0.962		0.9503		101	65	135		0		
Surr: 4-Bromofluorobenzene	0.954		0.9503		100	65	135		0		

**NOTES:**

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID	<b>LCS-16857</b>	SampType:	<b>LCS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>LCSW</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684162</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	484	50.0	500.0	0	96.9	65	135				
Surr: Toluene-d8	24.7		25.00		98.6	65	135				
Surr: 4-Bromofluorobenzene	26.1		25.00		104	65	135				

Sample ID	<b>MB-16857</b>	SampType:	<b>MBLK</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>MBLKW</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684163</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	24.6		25.00		98.5	65	135				
Surr: 4-Bromofluorobenzene	24.2		25.00		97.0	65	135				

Sample ID	<b>1704267-004ADUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684142</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	24.8		25.00		99.1	65	135		0		
Surr: 4-Bromofluorobenzene	24.4		25.00		97.7	65	135		0		

Sample ID	<b>1704267-006ADUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684145</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	24.8		25.00		99.2	65	135		0		
Surr: 4-Bromofluorobenzene	24.3		25.00		97.3	65	135		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID	<b>1704275-006AMS</b>	SampType:	<b>MS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>21417-GP1:GW</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684155</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	405	50.0	500.0	0	81.0	65	135				
Surr: Toluene-d8	24.9		25.00		99.5	65	135				
Surr: 4-Bromofluorobenzene	26.0		25.00		104	65	135				

Sample ID	<b>1704275-006AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35723</b>		
Client ID:	<b>21417-GP1:GW</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684156</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	438	50.0	500.0	0	87.6	65	135	405.2	7.80	30	
Surr: Toluene-d8	24.9		25.00		99.4	65	135		0		
Surr: 4-Bromofluorobenzene	25.9		25.00		103	65	135		0		

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	LCS-16859	SampType:	LCS	Units:	mg/Kg	Prep Date:	4/24/2017	RunNo:	35744		
Client ID:	LCSS	Batch ID:	16859	Analysis Date:	4/25/2017	SeqNo:	684704				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.842	0.0600	1.000	0	84.2	14.3	167				
Chloromethane	0.893	0.0600	1.000	0	89.3	46	144				
Vinyl chloride	0.922	0.00200	1.000	0	92.2	44	142				
Bromomethane	0.856	0.0900	1.000	0	85.6	40.9	157				
Trichlorofluoromethane (CFC-11)	0.921	0.0500	1.000	0	92.1	36.9	156				
Chloroethane	0.990	0.0600	1.000	0	99.0	33.4	155				
1,1-Dichloroethene	0.943	0.0500	1.000	0	94.3	49.7	142				
Methylene chloride	0.982	0.0200	1.000	0	98.2	46.3	140				
trans-1,2-Dichloroethene	0.967	0.0200	1.000	0	96.7	68	130				
Methyl tert-butyl ether (MTBE)	1.09	0.0500	1.000	0	109	66.3	145				
1,1-Dichloroethane	1.03	0.0200	1.000	0	103	61.9	137				
2,2-Dichloropropane	0.463	0.0500	1.000	0	46.3	35.5	186				
cis-1,2-Dichloroethene	1.01	0.0200	1.000	0	101	71.3	135				
Chloroform	1.01	0.0200	1.000	0	101	69	145				
1,1,1-Trichloroethane (TCA)	1.01	0.0200	1.000	0	101	69	132				
1,1-Dichloropropene	1.02	0.0200	1.000	0	102	72.7	131				
Carbon tetrachloride	0.985	0.0200	1.000	0	98.5	63.4	137				
1,2-Dichloroethane (EDC)	1.07	0.0300	1.000	0	107	61.9	136				
Benzene	1.00	0.0200	1.000	0	100	64.3	133				
Trichloroethene (TCE)	1.02	0.0200	1.000	0	102	65.5	137				
1,2-Dichloropropane	1.08	0.0200	1.000	0	108	63.2	142				
Bromodichloromethane	1.03	0.0200	1.000	0	103	73.2	131				
Dibromomethane	1.08	0.0400	1.000	0	108	70	130				
cis-1,3-Dichloropropene	1.01	0.0200	1.000	0	101	59.1	143				
Toluene	1.04	0.0200	1.000	0	104	67.3	138				
trans-1,3-Dichloropropylene	0.993	0.0300	1.000	0	99.3	49.2	149				
1,1,2-Trichloroethane	1.05	0.0300	1.000	0	105	74.5	129				
1,3-Dichloropropane	1.07	0.0500	1.000	0	107	70	130				
Tetrachloroethene (PCE)	1.03	0.0200	1.000	0	103	52.7	150				
Dibromochloromethane	1.07	0.0300	1.000	0	107	70.6	144				
1,2-Dibromoethane (EDB)	1.04	0.00500	1.000	0	104	70	130				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>LCS-16859</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>LCSS</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684704</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.02	0.0200	1.000	0	102	76.1	123				
1,1,1,2-Tetrachloroethane	1.03	0.0300	1.000	0	103	65.9	141				
Ethylbenzene	1.03	0.0300	1.000	0	103	74	129				
m,p-Xylene	2.07	0.0200	2.000	0	103	70	124				
o-Xylene	1.03	0.0200	1.000	0	103	68.1	139				
Styrene	1.02	0.0200	1.000	0	102	76.8	130				
Isopropylbenzene	1.03	0.0800	1.000	0	103	70	130				
Bromoform	0.913	0.0200	1.000	0	91.3	67	154				
1,1,2,2-Tetrachloroethane	1.06	0.0200	1.000	0	106	60	130				
n-Propylbenzene	1.03	0.0200	1.000	0	103	74.8	125				
Bromobenzene	1.04	0.0300	1.000	0	104	49.2	144				
1,3,5-Trimethylbenzene	1.02	0.0200	1.000	0	102	74.6	123				
2-Chlorotoluene	1.04	0.0200	1.000	0	104	76.7	129				
4-Chlorotoluene	1.04	0.0200	1.000	0	104	77.5	125				
tert-Butylbenzene	1.03	0.0200	1.000	0	103	66.2	130				
1,2,3-Trichloropropane	1.02	0.0200	1.000	0	102	67.9	136				
1,2,4-Trichlorobenzene	1.14	0.0500	1.000	0	114	62.6	143				
sec-Butylbenzene	1.08	0.0200	1.000	0	108	75.6	133				
4-Isopropyltoluene	1.09	0.0200	1.000	0	109	76.8	131				
1,3-Dichlorobenzene	1.05	0.0200	1.000	0	105	72.8	128				
1,4-Dichlorobenzene	1.06	0.0200	1.000	0	106	72.6	126				
n-Butylbenzene	1.10	0.0200	1.000	0	110	65.3	136				
1,2-Dichlorobenzene	1.07	0.0200	1.000	0	107	72.8	126				
1,2-Dibromo-3-chloropropane	1.06	0.500	1.000	0	106	61.2	139				
1,2,4-Trimethylbenzene	1.05	0.0200	1.000	0	105	77.5	129				
Hexachlorobutadiene	1.11	0.100	1.000	0	111	42	151				
Naphthalene	1.22	0.0300	1.000	0	122	62.3	134				
1,2,3-Trichlorobenzene	1.14	0.0200	1.000	0	114	54.8	143				
Surr: Dibromofluoromethane	1.24		1.250		99.4	56.5	129				
Surr: Toluene-d8	1.29		1.250		103	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	1.35		1.250		108	63.1	141				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>LCS-16859</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684704</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>MB-16859</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684705</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									Q
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>MB-16859</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684705</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>MB-16859</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684705</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.20		1.250		96.2	56.5	129				
Surr: Toluene-d8	1.24		1.250		99.0	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	1.21		1.250		96.4	63.1	141				

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID <b>1704274-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684687</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0775						0		30	
Chloromethane	ND	0.0775						0		30	
Vinyl chloride	ND	0.00258						0		30	
Bromomethane	ND	0.116						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0646						0		30	
Chloroethane	ND	0.0775						0		30	
1,1-Dichloroethene	ND	0.0646						0		30	
Methylene chloride	ND	0.0258						0		30	
trans-1,2-Dichloroethene	ND	0.0258						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0646						0		30	
1,1-Dichloroethane	ND	0.0258						0		30	
2,2-Dichloropropane	ND	0.0646						0		30	Q
cis-1,2-Dichloroethene	ND	0.0258						0		30	
Chloroform	ND	0.0258						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0258						0		30	
1,1-Dichloropropene	ND	0.0258						0		30	
Carbon tetrachloride	ND	0.0258						0		30	
1,2-Dichloroethane (EDC)	ND	0.0387						0		30	



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704274-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684687</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0258						0		30	
Trichloroethene (TCE)	ND	0.0258						0		30	
1,2-Dichloropropane	ND	0.0258						0		30	
Bromodichloromethane	ND	0.0258						0		30	
Dibromomethane	ND	0.0516						0		30	
cis-1,3-Dichloropropene	ND	0.0258						0		30	
Toluene	ND	0.0258						0		30	
trans-1,3-Dichloropropylene	ND	0.0387						0		30	
1,1,2-Trichloroethane	ND	0.0387						0		30	
1,3-Dichloropropane	ND	0.0646						0		30	
Tetrachloroethene (PCE)	ND	0.0258						0		30	
Dibromochloromethane	ND	0.0387						0		30	
1,2-Dibromoethane (EDB)	ND	0.00646						0		30	
Chlorobenzene	ND	0.0258						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0387						0		30	
Ethylbenzene	ND	0.0387						0		30	
m,p-Xylene	0.106	0.0258						0.1014	4.62	30	
o-Xylene	ND	0.0258						0		30	
Styrene	ND	0.0258						0		30	
Isopropylbenzene	ND	0.103						0		30	
Bromoform	ND	0.0258						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0258						0		30	
n-Propylbenzene	0.0676	0.0258						0.06003	11.8	30	
Bromobenzene	ND	0.0387						0		30	
1,3,5-Trimethylbenzene	ND	0.0258						0		30	
2-Chlorotoluene	ND	0.0258						0		30	
4-Chlorotoluene	ND	0.0258						0		30	
tert-Butylbenzene	ND	0.0258						0		30	
1,2,3-Trichloropropane	ND	0.0258						0		30	
1,2,4-Trichlorobenzene	ND	0.0646						0		30	
sec-Butylbenzene	0.0684	0.0258						0.06186	10.1	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1704274-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684687</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

4-Isopropyltoluene	0.0555	0.0258						0.04919	12.0	30	
1,3-Dichlorobenzene	ND	0.0258						0		30	
1,4-Dichlorobenzene	ND	0.0258						0		30	
n-Butylbenzene	0.0651	0.0258						0.05992	8.29	30	
1,2-Dichlorobenzene	ND	0.0258						0		30	
1,2-Dibromo-3-chloropropane	ND	0.646						0		30	
1,2,4-Trimethylbenzene	0.519	0.0258						0.4644	11.0	30	
Hexachlorobutadiene	ND	0.129						0		30	
Naphthalene	ND	0.0387						0		30	
1,2,3-Trichlorobenzene	ND	0.0258						0		30	
Surr: Dibromofluoromethane	1.40		1.614		87.0	56.5	129		0		
Surr: Toluene-d8	1.61		1.614		99.6	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	1.58		1.614		98.0	63.1	141		0		

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID <b>1704274-004BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684690</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0568						0		30	
Chloromethane	ND	0.0568						0		30	
Vinyl chloride	ND	0.00189						0		30	
Bromomethane	ND	0.0852						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0473						0		30	
Chloroethane	ND	0.0568						0		30	
1,1-Dichloroethene	ND	0.0473						0		30	
Methylene chloride	ND	0.0189						0		30	
trans-1,2-Dichloroethene	ND	0.0189						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0473						0		30	
1,1-Dichloroethane	ND	0.0189						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	1704274-004BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	4/24/2017	RunNo:	35744
Client ID:	BATCH	Batch ID:	16859			Analysis Date:	4/25/2017	SeqNo:	684690

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.0473						0		30	Q
cis-1,2-Dichloroethene	ND	0.0189						0		30	
Chloroform	ND	0.0189						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0189						0		30	
1,1-Dichloropropene	ND	0.0189						0		30	
Carbon tetrachloride	ND	0.0189						0		30	
1,2-Dichloroethane (EDC)	ND	0.0284						0		30	
Benzene	ND	0.0189						0		30	
Trichloroethene (TCE)	ND	0.0189						0		30	
1,2-Dichloropropane	ND	0.0189						0		30	
Bromodichloromethane	ND	0.0189						0		30	
Dibromomethane	ND	0.0379						0		30	
cis-1,3-Dichloropropene	ND	0.0189						0		30	
Toluene	ND	0.0189						0		30	
trans-1,3-Dichloropropylene	ND	0.0284						0		30	
1,1,2-Trichloroethane	ND	0.0284						0		30	
1,3-Dichloropropane	ND	0.0473						0		30	
Tetrachloroethene (PCE)	ND	0.0189						0		30	
Dibromochloromethane	ND	0.0284						0		30	
1,2-Dibromoethane (EDB)	ND	0.00473						0		30	
Chlorobenzene	ND	0.0189						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0284						0		30	
Ethylbenzene	ND	0.0284						0		30	
m,p-Xylene	ND	0.0189						0		30	
o-Xylene	ND	0.0189						0		30	
Styrene	ND	0.0189						0		30	
Isopropylbenzene	ND	0.0757						0		30	
Bromoform	ND	0.0189						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0189						0		30	
n-Propylbenzene	ND	0.0189						0		30	
Bromobenzene	ND	0.0284						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	<b>1704274-004BDUP</b>	SampType:	<b>DUP</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35744</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684690</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,3,5-Trimethylbenzene	ND	0.0189						0		30	
2-Chlorotoluene	ND	0.0189						0		30	
4-Chlorotoluene	ND	0.0189						0		30	
tert-Butylbenzene	ND	0.0189						0		30	
1,2,3-Trichloropropane	ND	0.0189						0		30	
1,2,4-Trichlorobenzene	ND	0.0473						0		30	
sec-Butylbenzene	ND	0.0189						0		30	
4-Isopropyltoluene	ND	0.0189						0		30	
1,3-Dichlorobenzene	ND	0.0189						0		30	
1,4-Dichlorobenzene	ND	0.0189						0		30	
n-Butylbenzene	ND	0.0189						0		30	
1,2-Dichlorobenzene	ND	0.0189						0		30	
1,2-Dibromo-3-chloropropane	ND	0.473						0		30	
1,2,4-Trimethylbenzene	ND	0.0189						0		30	
Hexachlorobutadiene	ND	0.0947						0		30	
Naphthalene	ND	0.0284						0		30	
1,2,3-Trichlorobenzene	ND	0.0189						0		30	
Surr: Dibromofluoromethane	1.02		1.183		86.5	56.5	129		0		
Surr: Toluene-d8	1.17		1.183		98.6	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	1.12		1.183		94.9	63.1	141		0		

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID	<b>1704274-006BMS</b>	SampType:	<b>MS</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35744</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684692</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	1.40	0.0569	1.898	0	74.0	43.5	121				
Chloromethane	1.73	0.0569	1.898	0	91.4	45	130				
Vinyl chloride	1.68	0.00190	1.898	0	88.7	51.2	146				
Bromomethane	1.23	0.0854	1.898	0	64.8	21.3	120				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704274-006BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684692</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (CFC-11)	1.56	0.0475	1.898	0	82.3	35	131				
Chloroethane	1.80	0.0569	1.898	0	95.0	31.9	123				
1,1-Dichloroethene	1.82	0.0475	1.898	0	95.9	61.9	141				
Methylene chloride	2.00	0.0190	1.898	0	105	54.7	142				
trans-1,2-Dichloroethene	1.91	0.0190	1.898	0	101	52	136				
Methyl tert-butyl ether (MTBE)	2.20	0.0475	1.898	0	116	54.4	132				
1,1-Dichloroethane	1.97	0.0190	1.898	0	104	51.8	141				
2,2-Dichloropropane	0.696	0.0475	1.898	0	36.7	36	123				
cis-1,2-Dichloroethene	1.95	0.0190	1.898	0	103	58.6	136				
Chloroform	2.02	0.0190	1.898	0	107	53.2	129				
1,1,1-Trichloroethane (TCA)	1.96	0.0190	1.898	0	103	58.3	145				
1,1-Dichloropropene	2.01	0.0190	1.898	0	106	55.1	138				
Carbon tetrachloride	1.78	0.0190	1.898	0	93.8	53.3	144				
1,2-Dichloroethane (EDC)	2.08	0.0285	1.898	0	110	51.3	139				
Benzene	1.98	0.0190	1.898	0	104	63.5	133				
Trichloroethene (TCE)	1.97	0.0190	1.898	0	104	68.6	132				
1,2-Dichloropropane	2.11	0.0190	1.898	0	111	59	136				
Bromodichloromethane	1.88	0.0190	1.898	0	99.3	50.7	141				
Dibromomethane	1.98	0.0380	1.898	0	104	50.6	137				
cis-1,3-Dichloropropene	1.68	0.0190	1.898	0	88.6	50.4	138				
Toluene	2.04	0.0190	1.898	0	107	63.4	132				
trans-1,3-Dichloropropylene	1.64	0.0285	1.898	0	86.4	44.1	147				
1,1,2-Trichloroethane	2.01	0.0285	1.898	0	106	51.6	137				
1,3-Dichloropropane	2.06	0.0475	1.898	0	108	53.1	134				
Tetrachloroethene (PCE)	2.00	0.0190	1.898	0	105	35.6	158				
Dibromochloromethane	1.71	0.0285	1.898	0	89.9	55.3	140				
1,2-Dibromoethane (EDB)	2.00	0.00475	1.898	0	106	50.4	136				
Chlorobenzene	1.98	0.0190	1.898	0	104	60	133				
1,1,1,2-Tetrachloroethane	1.91	0.0285	1.898	0	101	53.1	142				
Ethylbenzene	2.03	0.0285	1.898	0	107	54.5	134				
m,p-Xylene	4.02	0.0190	3.796	0	106	53.1	132				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704274-006BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684692</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	2.03	0.0190	1.898	0	107	53.3	139				
Styrene	1.99	0.0190	1.898	0	105	51.1	132				
Isopropylbenzene	2.06	0.0759	1.898	0	109	58.9	138				
Bromoform	1.54	0.0190	1.898	0	80.9	57.9	130				
1,1,1,2,2-Tetrachloroethane	1.91	0.0190	1.898	0	101	51.9	131				
n-Propylbenzene	2.06	0.0190	1.898	0	108	53.6	140				
Bromobenzene	2.00	0.0285	1.898	0	105	54.2	140				
1,3,5-Trimethylbenzene	2.05	0.0190	1.898	0	108	51.8	136				
2-Chlorotoluene	2.04	0.0190	1.898	0	108	51.6	136				
4-Chlorotoluene	2.06	0.0190	1.898	0	109	50.1	139				
tert-Butylbenzene	2.08	0.0190	1.898	0	109	50.5	135				
1,2,3-Trichloropropane	1.93	0.0190	1.898	0	102	50.5	131				
1,2,4-Trichlorobenzene	2.02	0.0475	1.898	0	107	50.8	130				
sec-Butylbenzene	1.94	0.0190	1.898	0	102	52.6	141				
4-Isopropyltoluene	1.93	0.0190	1.898	0	102	52.9	134				
1,3-Dichlorobenzene	1.89	0.0190	1.898	0	99.4	52.6	131				
1,4-Dichlorobenzene	1.89	0.0190	1.898	0	99.5	52.9	129				
n-Butylbenzene	2.02	0.0190	1.898	0	107	52.6	130				
1,2-Dichlorobenzene	1.91	0.0190	1.898	0	101	55.8	129				
1,2-Dibromo-3-chloropropane	1.74	0.475	1.898	0	91.7	40.5	131				
1,2,4-Trimethylbenzene	2.08	0.0190	1.898	0	110	50.6	137				
Hexachlorobutadiene	2.09	0.0949	1.898	0	110	40.6	158				
Naphthalene	1.91	0.0285	1.898	0	101	52.3	124				
1,2,3-Trichlorobenzene	2.02	0.0190	1.898	0	106	54.4	124				
Surr: Dibromofluoromethane	1.11		1.186		93.7	56.5	129				
Surr: Toluene-d8	1.24		1.186		104	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	1.29		1.186		109	63.1	141				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704274-006BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684693</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.38	0.0569	1.898	0	72.9	43.5	121	1.404	1.45	30	
Chloromethane	1.78	0.0569	1.898	0	93.8	45	130	1.735	2.57	30	
Vinyl chloride	1.64	0.00190	1.898	0	86.2	51.2	146	1.684	2.94	30	
Bromomethane	1.25	0.0854	1.898	0	65.9	21.3	120	1.230	1.66	30	
Trichlorofluoromethane (CFC-11)	1.46	0.0475	1.898	0	76.8	35	131	1.562	6.92	30	
Chloroethane	1.67	0.0569	1.898	0	87.9	31.9	123	1.803	7.79	30	
1,1-Dichloroethene	1.77	0.0475	1.898	0	93.4	61.9	141	1.821	2.70	30	
Methylene chloride	1.95	0.0190	1.898	0	103	54.7	142	1.996	2.55	30	
trans-1,2-Dichloroethene	1.85	0.0190	1.898	0	97.4	52	136	1.908	3.16	30	
Methyl tert-butyl ether (MTBE)	2.18	0.0475	1.898	0	115	54.4	132	2.204	1.02	30	
1,1-Dichloroethane	1.91	0.0190	1.898	0	101	51.8	141	1.968	2.94	30	
2,2-Dichloropropane	0.690	0.0475	1.898	0	36.3	36	123	0.6961	0.941	30	
cis-1,2-Dichloroethene	1.89	0.0190	1.898	0	99.8	58.6	136	1.950	2.91	30	
Chloroform	1.94	0.0190	1.898	0	102	53.2	129	2.023	4.13	30	
1,1,1-Trichloroethane (TCA)	1.88	0.0190	1.898	0	98.8	58.3	145	1.959	4.39	30	
1,1-Dichloropropene	1.89	0.0190	1.898	0	99.4	55.1	138	2.011	6.41	30	
Carbon tetrachloride	1.77	0.0190	1.898	0	93.1	53.3	144	1.780	0.688	30	
1,2-Dichloroethane (EDC)	2.05	0.0285	1.898	0	108	51.3	139	2.082	1.51	30	
Benzene	1.90	0.0190	1.898	0	99.9	63.5	133	1.978	4.24	30	
Trichloroethene (TCE)	1.88	0.0190	1.898	0	98.9	68.6	132	1.968	4.70	30	
1,2-Dichloropropane	2.04	0.0190	1.898	0	108	59	136	2.110	3.29	30	
Bromodichloromethane	1.85	0.0190	1.898	0	97.3	50.7	141	1.884	1.96	30	
Dibromomethane	1.95	0.0380	1.898	0	103	50.6	137	1.978	1.42	30	
cis-1,3-Dichloropropene	1.65	0.0190	1.898	0	87.1	50.4	138	1.682	1.76	30	
Toluene	1.95	0.0190	1.898	0	103	63.4	132	2.039	4.64	30	
trans-1,3-Dichloropropylene	1.63	0.0285	1.898	0	85.8	44.1	147	1.641	0.761	30	
1,1,2-Trichloroethane	1.92	0.0285	1.898	0	101	51.6	137	2.010	4.63	30	
1,3-Dichloropropane	1.98	0.0475	1.898	0	104	53.1	134	2.059	3.81	30	
Tetrachloroethene (PCE)	1.91	0.0190	1.898	0	100	35.6	158	1.996	4.67	30	
Dibromochloromethane	1.68	0.0285	1.898	0	88.6	55.3	140	1.706	1.40	30	
1,2-Dibromoethane (EDB)	1.93	0.00475	1.898	0	102	50.4	136	2.004	3.83	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704274-006BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35744</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16859</b>		Analysis Date: <b>4/25/2017</b>	SeqNo: <b>684693</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.94	0.0190	1.898	0	102	60	133	1.982	2.10	30	
1,1,1,2-Tetrachloroethane	1.91	0.0285	1.898	0	100	53.1	142	1.912	0.360	30	
Ethylbenzene	1.96	0.0285	1.898	0	103	54.5	134	2.026	3.40	30	
m,p-Xylene	3.90	0.0190	3.796	0	103	53.1	132	4.021	3.05	30	
o-Xylene	1.96	0.0190	1.898	0	103	53.3	139	2.025	3.19	30	
Styrene	1.95	0.0190	1.898	0	103	51.1	132	1.994	2.01	30	
Isopropylbenzene	1.99	0.0759	1.898	0	105	58.9	138	2.060	3.65	30	
Bromoform	1.53	0.0190	1.898	0	80.7	57.9	130	1.536	0.201	30	
1,1,2,2-Tetrachloroethane	1.88	0.0190	1.898	0	98.8	51.9	131	1.915	2.05	30	
n-Propylbenzene	1.98	0.0190	1.898	0	104	53.6	140	2.059	3.91	30	
Bromobenzene	1.96	0.0285	1.898	0	103	54.2	140	1.999	1.86	30	
1,3,5-Trimethylbenzene	1.98	0.0190	1.898	0	104	51.8	136	2.048	3.35	30	
2-Chlorotoluene	1.98	0.0190	1.898	0	104	51.6	136	2.042	3.08	30	
4-Chlorotoluene	2.01	0.0190	1.898	0	106	50.1	139	2.061	2.50	30	
tert-Butylbenzene	1.99	0.0190	1.898	0	105	50.5	135	2.075	4.00	30	
1,2,3-Trichloropropane	1.88	0.0190	1.898	0	99.3	50.5	131	1.929	2.33	30	
1,2,4-Trichlorobenzene	2.05	0.0475	1.898	0	108	50.8	130	2.022	1.21	30	
sec-Butylbenzene	1.87	0.0190	1.898	0	98.7	52.6	141	1.939	3.43	30	
4-Isopropyltoluene	1.87	0.0190	1.898	0	98.8	52.9	134	1.928	2.80	30	
1,3-Dichlorobenzene	1.86	0.0190	1.898	0	97.8	52.6	131	1.887	1.68	30	
1,4-Dichlorobenzene	1.86	0.0190	1.898	0	98.0	52.9	129	1.889	1.53	30	
n-Butylbenzene	1.99	0.0190	1.898	0	105	52.6	130	2.024	1.56	30	
1,2-Dichlorobenzene	1.86	0.0190	1.898	0	97.8	55.8	129	1.908	2.70	30	
1,2-Dibromo-3-chloropropane	1.69	0.475	1.898	0	88.9	40.5	131	1.740	3.02	30	
1,2,4-Trimethylbenzene	2.01	0.0190	1.898	0	106	50.6	137	2.085	3.60	30	
Hexachlorobutadiene	2.08	0.0949	1.898	0	110	40.6	158	2.093	0.621	30	
Naphthalene	1.96	0.0285	1.898	0	103	52.3	124	1.911	2.77	30	
1,2,3-Trichlorobenzene	2.04	0.0190	1.898	0	108	54.4	124	2.015	1.33	30	
Surr: Dibromofluoromethane	1.12		1.186		94.7	56.5	129		0		
Surr: Toluene-d8	1.22		1.186		103	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	1.30		1.186		109	63.1	141		0		



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	<b>1704274-006BMSD</b>	SampType:	<b>MSD</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35744</b>				
Client ID:	<b>BATCH</b>	Batch ID:	<b>16859</b>			Analysis Date:	<b>4/25/2017</b>	SeqNo:	<b>684693</b>				
Analyte		Result		RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>LCS-16857</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>LCSW</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684109</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	17.8	1.00	20.00	0	89.0	18.7	171				
Chloromethane	19.0	1.00	20.00	0	95.0	38.5	171				
Vinyl chloride	18.7	0.200	20.00	0	93.5	48	145				
Bromomethane	18.5	1.00	20.00	0	92.6	32.5	184				
Trichlorofluoromethane (CFC-11)	18.9	1.00	20.00	0	94.7	43.5	149				
Chloroethane	19.3	1.00	20.00	0	96.6	43.8	168				
1,1-Dichloroethene	18.8	1.00	20.00	0	94.0	57.5	150				
Methylene chloride	19.8	1.00	20.00	0	99.2	67.1	131				
trans-1,2-Dichloroethene	19.3	1.00	20.00	0	96.5	71.7	129				
Methyl tert-butyl ether (MTBE)	20.6	1.00	20.00	0	103	58	138				
1,1-Dichloroethane	20.4	1.00	20.00	0	102	67.9	134				
2,2-Dichloropropane	30.2	2.00	20.00	0	151	26.5	185				
cis-1,2-Dichloroethene	20.0	1.00	20.00	0	99.9	70.2	139				
Chloroform	20.6	1.00	20.00	0	103	66.3	131				
1,1,1-Trichloroethane (TCA)	20.2	1.00	20.00	0	101	71	131				
1,1-Dichloropropene	20.8	1.00	20.00	0	104	69.9	124				
Carbon tetrachloride	21.1	1.00	20.00	0	106	66.2	134				
1,2-Dichloroethane (EDC)	21.5	1.00	20.00	0	107	67	126				
Benzene	20.2	1.00	20.00	0	101	69.3	132				
Trichloroethene (TCE)	20.1	0.500	20.00	0	100	65.2	136				
1,2-Dichloropropane	21.3	1.00	20.00	0	106	70.5	130				
Bromodichloromethane	19.8	1.00	20.00	0	99.2	67.2	137				
Dibromomethane	20.1	1.00	20.00	0	100	69.3	143				
cis-1,3-Dichloropropene	22.7	1.00	20.00	0	113	62.6	137				
Toluene	21.0	1.00	20.00	0	105	61.3	145				
trans-1,3-Dichloropropylene	22.1	1.00	20.00	0	110	56.5	163				
1,1,2-Trichloroethane	20.1	1.00	20.00	0	101	71.7	131				
1,3-Dichloropropane	20.4	1.00	20.00	0	102	73.5	127				
Tetrachloroethene (PCE)	21.9	1.00	20.00	0	109	47.5	147				
Dibromochloromethane	20.0	1.00	20.00	0	99.9	67.2	134				
1,2-Dibromoethane (EDB)	19.6	0.0600	20.00	0	98.2	73.6	125				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	LCS-16857	SampType:	LCS	Units:	µg/L	Prep Date:	4/24/2017	RunNo:	35722
Client ID:	LCSW	Batch ID:	16857			Analysis Date:	4/24/2017	SeqNo:	684109

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	20.2	1.00	20.00	0	101	73.9	126				
1,1,1,2-Tetrachloroethane	19.6	1.00	20.00	0	97.8	76.8	124				
Ethylbenzene	20.2	1.00	20.00	0	101	72	130				
m,p-Xylene	40.5	1.00	40.00	0	101	70.3	134				
o-Xylene	20.1	1.00	20.00	0	100	72.1	131				
Styrene	19.9	1.00	20.00	0	99.5	64.3	140				
Isopropylbenzene	20.4	1.00	20.00	0	102	73.9	128				
Bromoform	15.5	1.00	20.00	0	77.4	55.3	141				
1,1,2,2-Tetrachloroethane	18.5	1.00	20.00	0	92.3	62.9	132				
n-Propylbenzene	20.5	1.00	20.00	0	103	74.5	127				
Bromobenzene	20.0	1.00	20.00	0	100	71	131				
1,3,5-Trimethylbenzene	20.4	1.00	20.00	0	102	73.1	128				
2-Chlorotoluene	20.7	1.00	20.00	0	104	70.8	130				
4-Chlorotoluene	20.3	1.00	20.00	0	101	70.1	131				
tert-Butylbenzene	20.3	1.00	20.00	0	102	68.2	131				
1,2,3-Trichloropropane	19.0	1.00	20.00	0	94.9	67.7	131				
1,2,4-Trichlorobenzene	20.9	2.00	20.00	0	105	51.8	152				
sec-Butylbenzene	21.6	1.00	20.00	0	108	72	129				
4-Isopropyltoluene	22.0	1.00	20.00	0	110	69.2	130				
1,3-Dichlorobenzene	21.0	1.00	20.00	0	105	80.4	124				
1,4-Dichlorobenzene	20.9	1.00	20.00	0	104	66.8	119				
n-Butylbenzene	22.4	1.00	20.00	0	112	73.8	127				
1,2-Dichlorobenzene	20.5	1.00	20.00	0	102	69.7	119				
1,2-Dibromo-3-chloropropane	16.8	1.00	20.00	0	83.8	63.1	136				
1,2,4-Trimethylbenzene	20.8	1.00	20.00	0	104	73.4	127				
Hexachloro-1,3-butadiene	23.6	4.00	20.00	0	118	58.6	138				
Naphthalene	19.2	1.00	20.00	0	96.1	41.8	165				
1,2,3-Trichlorobenzene	20.4	4.00	20.00	0	102	48.7	156				
Surr: Dibromofluoromethane	24.6		25.00		98.5	45.4	152				
Surr: Toluene-d8	26.3		25.00		105	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	26.8		25.00		107	64.2	128				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>LCS-16857</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684109</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>MB-16857</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684110</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	1.00									
Chloromethane	ND	1.00									
Vinyl chloride	ND	0.200									
Bromomethane	ND	1.00									
Trichlorofluoromethane (CFC-11)	ND	1.00									
Chloroethane	ND	1.00									
1,1-Dichloroethene	ND	1.00									
Methylene chloride	ND	1.00									
trans-1,2-Dichloroethene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	1.00									
1,1-Dichloroethane	ND	1.00									
2,2-Dichloropropane	ND	2.00									Q
cis-1,2-Dichloroethene	ND	1.00									
Chloroform	ND	1.00									
1,1,1-Trichloroethane (TCA)	ND	1.00									
1,1-Dichloropropene	ND	1.00									
Carbon tetrachloride	ND	1.00									
1,2-Dichloroethane (EDC)	ND	1.00									
Benzene	ND	1.00									
Trichloroethene (TCE)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
Bromodichloromethane	ND	1.00									
Dibromomethane	ND	1.00									
cis-1,3-Dichloropropene	ND	1.00									
Toluene	ND	1.00									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>MB-16857</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>MBLKW</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684110</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropylene	ND	1.00									
1,1,2-Trichloroethane	ND	1.00									
1,3-Dichloropropane	ND	1.00									
Tetrachloroethene (PCE)	ND	1.00									
Dibromochloromethane	ND	1.00									
1,2-Dibromoethane (EDB)	ND	0.0600									
Chlorobenzene	ND	1.00									
1,1,1,2-Tetrachloroethane	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Styrene	ND	1.00									
Isopropylbenzene	ND	1.00									
Bromoform	ND	1.00									Q
1,1,1,2-Tetrachloroethane	ND	1.00									
n-Propylbenzene	ND	1.00									
Bromobenzene	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
2-Chlorotoluene	ND	1.00									
4-Chlorotoluene	ND	1.00									
tert-Butylbenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	2.00									
sec-Butylbenzene	ND	1.00									
4-Isopropyltoluene	ND	1.00									
1,3-Dichlorobenzene	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
n-Butylbenzene	ND	1.00									
1,2-Dichlorobenzene	ND	1.00									
1,2-Dibromo-3-chloropropane	ND	1.00									
1,2,4-Trimethylbenzene	ND	1.00									

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>MB-16857</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684110</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachloro-1,3-butadiene	ND	4.00									
Naphthalene	ND	1.00									
1,2,3-Trichlorobenzene	ND	4.00									
Surr: Dibromofluoromethane	24.0		25.00		96.0	45.4	152				
Surr: Toluene-d8	24.7		25.00		99.0	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	23.6		25.00		94.5	64.2	128				

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID <b>1704267-004ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684088</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	Q
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704267-004ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684088</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	Q
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1704267-004ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684088</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	24.7		25.00		98.9	45.4	152		0		
Surr: Toluene-d8	24.8		25.00		99.3	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	23.6		25.00		94.3	64.2	128		0		

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID <b>1704267-006ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684091</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	1704267-006ADUP	SampType:	DUP	Units:	µg/L	Prep Date:	4/24/2017	RunNo:	35722		
Client ID:	BATCH	Batch ID:	16857	Analysis Date:	4/24/2017	SeqNo:	684091				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	2.00						0		30	Q
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropylene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	Q
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704267-006ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684091</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachloro-1,3-butadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	24.3		25.00		97.1	45.4	152		0		
Surr: Toluene-d8	24.9		25.00		99.7	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	23.4		25.00		93.8	64.2	128		0		

**NOTES:**

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID: <b>1704271-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684097</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	19.5	1.00	20.00	0	97.4	33.3	122				
Chloromethane	19.5	1.00	20.00	0	97.4	39.7	143				
Vinyl chloride	20.6	0.200	20.00	0	103	41	165				
Bromomethane	21.2	1.00	20.00	0	106	31.5	135				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	1704271-001AMS	SampType:	MS	Units:	µg/L	Prep Date:	4/24/2017	RunNo:	35722
Client ID:	BATCH	Batch ID:	16857			Analysis Date:	4/24/2017	SeqNo:	684097

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (CFC-11)	21.3	1.00	20.00	0	107	54.7	138				
Chloroethane	21.0	1.00	20.00	0	105	49.9	143				
1,1-Dichloroethene	21.0	1.00	20.00	0	105	51.6	164				
Methylene chloride	20.3	1.00	20.00	0	101	61.6	135				
trans-1,2-Dichloroethene	20.6	1.00	20.00	0	103	63.5	138				
Methyl tert-butyl ether (MTBE)	21.2	1.00	20.00	0	106	60.9	132				
1,1-Dichloroethane	21.3	1.00	20.00	0	106	55.7	151				
2,2-Dichloropropane	20.0	2.00	20.00	0	100	37.7	150				
cis-1,2-Dichloroethene	20.7	1.00	20.00	0	104	60	154				
Chloroform	21.4	1.00	20.00	0	107	48.1	140				
1,1,1-Trichloroethane (TCA)	21.8	1.00	20.00	0	109	64.2	146				
1,1-Dichloropropene	22.4	1.00	20.00	0	112	73.8	136				
Carbon tetrachloride	22.1	1.00	20.00	0	110	62.7	146				
1,2-Dichloroethane (EDC)	22.9	1.00	20.00	0	114	63.4	137				
Benzene	21.5	1.00	20.00	0	107	65.4	138				
Trichloroethene (TCE)	21.6	0.500	20.00	0	108	60.4	134				
1,2-Dichloropropane	22.0	1.00	20.00	0	110	62.6	138				
Bromodichloromethane	21.2	1.00	20.00	0	106	59.4	139				
Dibromomethane	22.7	1.00	20.00	0	113	58.7	148				
cis-1,3-Dichloropropene	22.0	1.00	20.00	0	110	63.8	132				
Toluene	22.1	1.00	20.00	0	110	52	147				
trans-1,3-Dichloropropylene	21.7	1.00	20.00	0	108	57.7	125				
1,1,2-Trichloroethane	22.4	1.00	20.00	0	112	57.5	153				
1,3-Dichloropropane	22.5	1.00	20.00	0	113	54.1	157				
Tetrachloroethene (PCE)	23.0	1.00	20.00	0	115	50.3	133				
Dibromochloromethane	21.9	1.00	20.00	0	110	61.6	139				
1,2-Dibromoethane (EDB)	22.0	0.0600	20.00	0	110	63.2	134				
Chlorobenzene	21.4	1.00	20.00	0	107	65.8	134				
1,1,1,2-Tetrachloroethane	21.0	1.00	20.00	0	105	65.4	135				
Ethylbenzene	21.8	1.00	20.00	0	109	64.5	136				
m,p-Xylene	43.5	1.00	40.00	0	109	63.3	135				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	1704271-001AMS	SampType:	MS	Units:	µg/L	Prep Date:	4/24/2017	RunNo:	35722		
Client ID:	BATCH	Batch ID:	16857	Analysis Date:	4/24/2017	SeqNo:	684097				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	21.4	1.00	20.00	0	107	64.8	150				
Styrene	20.9	1.00	20.00	0	105	52.9	163				
Isopropylbenzene	22.1	1.00	20.00	0	110	56	147				
Bromoform	18.5	1.00	20.00	0	92.3	57.7	139				
1,1,1,2,2-Tetrachloroethane	22.2	1.00	20.00	0	111	59.8	146				
n-Propylbenzene	21.9	1.00	20.00	0	110	57.6	142				
Bromobenzene	21.3	1.00	20.00	0	107	69.3	157				
1,3,5-Trimethylbenzene	21.7	1.00	20.00	0	109	59.9	136				
2-Chlorotoluene	21.7	1.00	20.00	0	109	61.7	134				
4-Chlorotoluene	21.5	1.00	20.00	0	107	58.4	134				
tert-Butylbenzene	22.4	1.00	20.00	0	112	66.8	141				
1,2,3-Trichloropropane	21.8	1.00	20.00	0	109	62.4	129				
1,2,4-Trichlorobenzene	21.5	2.00	20.00	0	107	50.9	133				
sec-Butylbenzene	23.4	1.00	20.00	0	117	56	146				
4-Isopropyltoluene	23.1	1.00	20.00	0	115	56.4	136				
1,3-Dichlorobenzene	21.6	1.00	20.00	0	108	58.2	128				
1,4-Dichlorobenzene	21.4	1.00	20.00	0	107	60.1	123				
n-Butylbenzene	23.1	1.00	20.00	0	116	54.6	135				
1,2-Dichlorobenzene	21.6	1.00	20.00	0	108	65.4	133				
1,2-Dibromo-3-chloropropane	21.0	1.00	20.00	0	105	51.8	142				
1,2,4-Trimethylbenzene	21.7	1.00	20.00	0	109	63.7	132				
Hexachloro-1,3-butadiene	24.2	4.00	20.00	0	121	58.1	130				
Naphthalene	22.4	1.00	20.00	0	112	50.7	154				
1,2,3-Trichlorobenzene	22.4	4.00	20.00	0	112	57	131				
Surr: Dibromofluoromethane	25.0		25.00		100	45.4	152				
Surr: Toluene-d8	26.3		25.00		105	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	27.0		25.00		108	64.2	128				

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704271-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684098</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	19.0	1.00	20.00	0	95.2	33.3	122	19.48	2.30	30	
Chloromethane	20.9	1.00	20.00	0	105	39.7	143	19.48	7.06	30	
Vinyl chloride	21.8	0.200	20.00	0	109	41	165	20.64	5.24	30	
Bromomethane	20.8	1.00	20.00	0	104	31.5	135	21.19	1.80	30	
Trichlorofluoromethane (CFC-11)	21.6	1.00	20.00	0	108	54.7	138	21.34	1.05	30	
Chloroethane	21.4	1.00	20.00	0	107	49.9	143	20.97	1.83	30	
1,1-Dichloroethene	21.5	1.00	20.00	0	108	51.6	164	21.05	2.31	30	
Methylene chloride	20.7	1.00	20.00	0	103	61.6	135	20.28	1.88	30	
trans-1,2-Dichloroethene	21.1	1.00	20.00	0	105	63.5	138	20.63	2.08	30	
Methyl tert-butyl ether (MTBE)	22.3	1.00	20.00	0	112	60.9	132	21.23	4.92	30	
1,1-Dichloroethane	21.7	1.00	20.00	0	109	55.7	151	21.29	2.02	30	
2,2-Dichloropropane	20.1	2.00	20.00	0	100	37.7	150	20.02	0.214	30	
cis-1,2-Dichloroethene	21.1	1.00	20.00	0	106	60	154	20.73	1.77	30	
Chloroform	21.9	1.00	20.00	0	109	48.1	140	21.42	2.03	30	
1,1,1-Trichloroethane (TCA)	22.1	1.00	20.00	0	111	64.2	146	21.83	1.40	30	
1,1-Dichloropropene	22.5	1.00	20.00	0	112	73.8	136	22.37	0.375	30	
Carbon tetrachloride	22.3	1.00	20.00	0	112	62.7	146	22.08	1.12	30	
1,2-Dichloroethane (EDC)	23.0	1.00	20.00	0	115	63.4	137	22.87	0.574	30	
Benzene	21.5	1.00	20.00	0	107	65.4	138	21.45	0.159	30	
Trichloroethene (TCE)	21.5	0.500	20.00	0	107	60.4	134	21.64	0.854	30	
1,2-Dichloropropane	22.4	1.00	20.00	0	112	62.6	138	21.98	2.12	30	
Bromodichloromethane	21.3	1.00	20.00	0	107	59.4	139	21.24	0.302	30	
Dibromomethane	22.3	1.00	20.00	0	112	58.7	148	22.65	1.56	30	
cis-1,3-Dichloropropene	22.2	1.00	20.00	0	111	63.8	132	22.02	0.932	30	
Toluene	22.0	1.00	20.00	0	110	52	147	22.07	0.330	30	
trans-1,3-Dichloropropylene	22.0	1.00	20.00	0	110	57.7	125	21.70	1.22	30	
1,1,2-Trichloroethane	22.7	1.00	20.00	0	114	57.5	153	22.43	1.32	30	
1,3-Dichloropropane	22.2	1.00	20.00	0	111	54.1	157	22.51	1.18	30	
Tetrachloroethene (PCE)	23.0	1.00	20.00	0	115	50.3	133	22.99	0.0240	30	
Dibromochloromethane	22.3	1.00	20.00	0	111	61.6	139	21.91	1.57	30	
1,2-Dibromoethane (EDB)	22.0	0.0600	20.00	0	110	63.2	134	22.01	0.0680	30	

**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID: <b>1704271-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35722</b>
Client ID: <b>BATCH</b>	Batch ID: <b>16857</b>		Analysis Date: <b>4/24/2017</b>	SeqNo: <b>684098</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	21.4	1.00	20.00	0	107	65.8	134	21.44	0.318	30	
1,1,1,2-Tetrachloroethane	21.2	1.00	20.00	0	106	65.4	135	20.96	1.30	30	
Ethylbenzene	22.0	1.00	20.00	0	110	64.5	136	21.81	1.06	30	
m,p-Xylene	43.5	1.00	40.00	0	109	63.3	135	43.48	0.139	30	
o-Xylene	21.6	1.00	20.00	0	108	64.8	150	21.40	1.00	30	
Styrene	21.1	1.00	20.00	0	105	52.9	163	20.92	0.690	30	
Isopropylbenzene	22.3	1.00	20.00	0	112	56	147	22.08	1.13	30	
Bromoform	18.9	1.00	20.00	0	94.6	57.7	139	18.46	2.45	30	
1,1,2,2-Tetrachloroethane	22.5	1.00	20.00	0	112	59.8	146	22.15	1.46	30	
n-Propylbenzene	22.5	1.00	20.00	0	113	57.6	142	21.92	2.65	30	
Bromobenzene	21.7	1.00	20.00	0	109	69.3	157	21.32	1.89	30	
1,3,5-Trimethylbenzene	22.1	1.00	20.00	0	110	59.9	136	21.72	1.52	30	
2-Chlorotoluene	22.0	1.00	20.00	0	110	61.7	134	21.71	1.30	30	
4-Chlorotoluene	21.9	1.00	20.00	0	109	58.4	134	21.47	1.89	30	
tert-Butylbenzene	22.8	1.00	20.00	0	114	66.8	141	22.42	1.71	30	
1,2,3-Trichloropropane	22.3	1.00	20.00	0	111	62.4	129	21.82	2.05	30	
1,2,4-Trichlorobenzene	22.6	2.00	20.00	0	113	50.9	133	21.49	4.96	30	
sec-Butylbenzene	23.8	1.00	20.00	0	119	56	146	23.43	1.69	30	
4-Isopropyltoluene	23.4	1.00	20.00	0	117	56.4	136	23.06	1.42	30	
1,3-Dichlorobenzene	21.9	1.00	20.00	0	109	58.2	128	21.55	1.59	30	
1,4-Dichlorobenzene	21.9	1.00	20.00	0	110	60.1	123	21.42	2.38	30	
n-Butylbenzene	24.0	1.00	20.00	0	120	54.6	135	23.14	3.68	30	
1,2-Dichlorobenzene	22.1	1.00	20.00	0	111	65.4	133	21.58	2.38	30	
1,2-Dibromo-3-chloropropane	21.6	1.00	20.00	0	108	51.8	142	21.00	3.01	30	
1,2,4-Trimethylbenzene	22.0	1.00	20.00	0	110	63.7	132	21.71	1.35	30	
Hexachloro-1,3-butadiene	25.0	4.00	20.00	0	125	58.1	130	24.23	3.19	30	
Naphthalene	23.9	1.00	20.00	0	120	50.7	154	22.42	6.44	30	
1,2,3-Trichlorobenzene	23.1	4.00	20.00	0	115	57	131	22.37	3.05	30	
Surr: Dibromofluoromethane	24.8		25.00		99.2	45.4	152		0		
Surr: Toluene-d8	25.8		25.00		103	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	27.0		25.00		108	64.2	128		0		



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	<b>1704271-001AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/L</b>	Prep Date:	<b>4/24/2017</b>	RunNo:	<b>35722</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>16857</b>			Analysis Date:	<b>4/24/2017</b>	SeqNo:	<b>684098</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual



**Work Order:** 1704275  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Sample Moisture (Percent Moisture)**

Sample ID <b>1704274-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>wt%</b>	Prep Date: <b>4/24/2017</b>	RunNo: <b>35703</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R35703</b>	Analysis Date: <b>4/24/2017</b>	SeqNo: <b>683761</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	15.3	0.500						17.34	12.3	20	

Client Name: **SW**

 Work Order Number: **1704275**

 Logged by: **Clare Griggs**

 Date Received: **4/21/2017 4:24:00 PM**

### Chain of Custody

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

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C \* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text" value="Blaine Nesbit"/>	Date	<input type="text" value="4/24/2017"/>
By Whom:	<input type="text" value="Clare Griggs"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="Confirming metals &amp; analyses."/>		
Client Instructions:	<input type="text" value="PP Metals for 21417-GP3:GW. Run VOCs/GX on sample 21417-GP4:GW"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	2.1
Sample	3.7
Temp Blank	7.3

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



3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 4/21/17 Page: 1 of 1

Laboratory Project No (internal): 1704275

Project Name: GIS Dexter Ave N Phase II

Special Remarks: Not field filtered

Client: Shannon & Wilson

Project No: 21-1-21417-205

Address: 100 N 34th Street Suite 100

Collected by: BON

City, State, Zip: Seattle, WA, 98107

Location:

Telephone: 206-695-6690

Report To (PM): Blaine Nesbit

Sample Disposal:  Return to client  Disposal by lab (after 30 days)

Fax:

PM Email: bon@shannwil.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytes													Comments			
				VOCs (EPA 8260 / 624)	GV/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HClD)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)	Anions (C)***	EDB (8011)		RCRA 8 Metals		
21417-GP1:25	4/21	12:40	S	X			X	X												2 vials, 14oz
21417-GP2:18	4/21/17	13:55	S	X			X	X	X										X	" "
21417-GP3:15.5	4/21/17	8:20	S	X							X									" "
21417-GP4:12	4/21	10:15	S	X			X	X	X											" "
21417-GP4:15	4/21	10:25	S	X			X	X	X											1 vial 14oz
21417-GP1:GW	4/21	12:50	GW	X			X	X												7 vOA, 2 Amber (QC taken)
21417-GP3:GW	4/21	9:10	GW	X			X	X			X	D								1 amber, 2 poly, 3 vOA (total and dissolved)
21417-GP4:GW	4/21	10:40	GW	X			X	X												1 vOA (analysis if possible)
																				(Do VOC if possible, then Gx or Dx)

\*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

\*\*Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

\*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished x Date/Time 4/21/17 16:24

Received Date/Time 4/21/2017 1624

Relinquished x \_\_\_\_\_ Date/Time \_\_\_\_\_

Received x \_\_\_\_\_ Date/Time \_\_\_\_\_

Turn-around Time:  
 Standard  
 3 Day  
 2 Day  
 Next Day  
 Same Day (specify) \_\_\_\_\_

Page 98 of 100



3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 4/21/17 Page: 1 of 1

Laboratory Project No (internal): 1704275

Project Name: 615 Dexter Ave N Phase II

Special Remarks:  
Not field filtered  
analyze per EN-424/17 CG

Project No: 211-21417-205

Collected by: BON

Location:

Report To (PM): Blake Nesbit

Sample Disposal:  Return to client  Disposal by lab (after 30 days)

PM Email: bon@sharwil.com

Client: Shannon & Wilson

Address: 400 N 34th Street Suite 100

City, State, Zip: Seattle, WA, 98107

Telephone: 206-695-6690

Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)	Analytes													Comments		
				VOCS (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8087 / 608)	Metals** (EPA 8070 / 200.8)	Total (T)   Dissolved (D)	Anions (IC)**	EDB (8011)			
21417-GP1:2S	4/21	12:40	S	X		X	X												2 vials, 14oz
21417-GP2:18	4/21/17	13:55	S	X		X	X	X										X	" "
21417-GP3:15.5	4/21/17	8:20	S	X						X									" "
21417-GP4:12	4/21	10:15	S	X		X	X	X											" "
21417-GP4:15	4/21	10:25	S	X		X	X	X											1 vial 14oz
21417-GP1:GW	4/21	12:50	GW	X		X	X												7 VOA, 2 Amber (QC taken)
21417-GP3:GW	4/21	9:10	GW	X		X	X				X	D							1 amber, 2 poly, 3 16A (total and dissolved)
21417-GP4:GW	4/21	10:40	GW	X		X	X												1 VOA (analysis if possible)
																			(Do VOC if possible, then GX or DX)

\*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

\*\*Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Se Sr Sn Ti Tl U V Zn

\*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished  
x Date/Time: 4/21/17 16:29

Received  
 Date/Time: 4/21/2017 1624

Turn-around Time:  
 Standard  
 3 Day  
 2 Day  
 Next Day  
 Same Day (specify)



3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

**Client:** Sumner & Wilson  
**Address:** 4300 N 34th St Suite 100  
**City, State, Zip:** Seattle, WA, 98107  
**Telephone:** 206-695-6690  
**Fax:**

**Date:** 4/21/17 **Page:** 1 **of:** 1  
**Project Name:** 615 Dexter Ave N Phase II  
**Project No:** 211-2117-200  
**Collected by:** BON  
**Location:**  
**Report To (PM):** Blake Nesbit  
**PM Email:** bon@shonwil.com

**Laboratory Project No (internal):** 1704275  
**Special Remarks:**  
Not field filtered  
diagnose - thylakoid  
**⊗ Add Pb analysis per B.N. 5/26/17 CW**  
Sample Disposal:  Return to client  Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	No. Analytes	Analytes													Comments	
					VOCs (EPA 8260/624)	GV/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270/625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EOB (8011)		
1 2117-GP1-3.5	4/21	15:55	S	X		X		X											2 vials, 1 402
2 2117-GP2-1.8	4/21/17	13:55	S	X		X		X	X										" "
3 2117-GP3-15.5	4/21/17	8:30	S	X						X									" "
4 2117-GP4-12	4/21	10:15	S	X		X		X	X										" "
5 2117-GP4-16	4/21	10:29	S	X		X		X	X										1 vial 1402
6 2117-GP5-GW	4/21	12:52	GW	X		X		X											7 vial, 7 Amb (OC trace)
7 2117-GP3-GW	4/21	9:10	GW	X		X		X					X	T					1 vial, 2 pty, 3 vial (total and 1402)
8 2117-GP4-GW	4/21	10:10	GW	X		X		X											1 vial (OC analysis 1 pty) and 1402
9																			(D) VOC if possible
10																			Men Gx or Dx

\*Matrix: A=Air, AQ=Aqueous, B=Bulk, O=Other, P=Product, S=Soil, SD=Sediment, SL=Solid, W=Water, DW=Drinking Water, GW=Ground Water, SW=Storm Water, WW=Waste Water  
 \*\*Metals (Circle): MTCA-5 RCRA-B (Priority Pollutants), TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti U V Zn  
 \*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished x Date/Time 4/21/17 16:24  
 Received Date/Time 4/21/2017 1624  
 Relinquished x \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received x \_\_\_\_\_ Date/Time \_\_\_\_\_

**Turn-around Time:**  
 Standard  
 3 Day  
 2 Day  
 Next Day  
 Same Day (specify)



**Shannon & Wilson**

Agnes Tirao  
400 N. 34th Street, Suite 100  
Seattle, WA 98103

**RE: 615 Dexter Ave N Phase II**  
**Work Order Number: 1705249**

June 06, 2017

**Attention Agnes Tirao:**

Fremont Analytical, Inc. received 6 sample(s) on 5/19/2017 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***  
***Gasoline by NWTPH-Gx***  
***Mercury by EPA Method 7471***  
***Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)***  
***Sample Moisture (Percent Moisture)***  
***Total Metals by EPA Method 6020***  
***Volatile Organic Compounds by EPA Method 8260C***

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,

Mike Ridgeway  
Laboratory Director

**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Work Order:** 1705249

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1705249-001	21417-GP5:1	05/19/2017 8:30 AM	05/19/2017 1:08 PM
1705249-002	21417-GP5:14	05/19/2017 9:50 AM	05/19/2017 1:08 PM
1705249-003	21417-GP6:18	05/19/2017 10:30 AM	05/19/2017 1:08 PM
1705249-004	21417-GP7:2	05/19/2017 10:50 AM	05/19/2017 1:08 PM
1705249-005	21417-GP7:13	05/19/2017 11:35 AM	05/19/2017 1:08 PM
1705249-006	Trip Blank	05/17/2017 2:30 PM	05/19/2017 1:08 PM

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**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

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**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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-001  
**Client Sample ID:** 21417-GP5:1

**Collection Date:** 5/19/2017 8:30:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 17145      Analyst: SB

Diesel (Fuel Oil)	ND	20.9		mg/Kg-dry	1	5/25/2017 7:45:12 AM
Heavy Oil	ND	52.4		mg/Kg-dry	1	5/25/2017 7:45:12 AM
Surr: 2-Fluorobiphenyl	87.5	50-150		%Rec	1	5/25/2017 7:45:12 AM
Surr: o-Terphenyl	86.0	50-150		%Rec	1	5/25/2017 7:45:12 AM

**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Batch ID: 17130      Analyst: BT

Naphthalene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
2-Methylnaphthalene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
1-Methylnaphthalene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Acenaphthylene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Acenaphthene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Fluorene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Phenanthrene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Anthracene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Fluoranthene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Pyrene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Benz(a)anthracene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Chrysene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Benzo(b)fluoranthene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Benzo(k)fluoranthene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Benzo(a)pyrene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Indeno(1,2,3-cd)pyrene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Dibenz(a,h)anthracene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Benzo(g,h,i)perylene	ND	42.0		µg/Kg-dry	1	5/23/2017 8:07:02 PM
Surr: 2-Fluorobiphenyl	54.1	24.5-139		%Rec	1	5/23/2017 8:07:02 PM
Surr: Terphenyl-d14 (surr)	78.7	44.3-176		%Rec	1	5/23/2017 8:07:02 PM

**Gasoline by NWTPH-Gx**

Batch ID: 17161      Analyst: EM

Gasoline	ND	4.32		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Surr: Toluene-d8	101	65-135		%Rec	1	5/25/2017 9:20:50 PM
Surr: 4-Bromofluorobenzene	100	65-135		%Rec	1	5/25/2017 9:20:50 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0518		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Chloromethane	ND	0.0518		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Vinyl chloride	ND	0.00173		mg/Kg-dry	1	5/25/2017 9:20:50 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-001  
**Client Sample ID:** 21417-GP5:1

**Collection Date:** 5/19/2017 8:30:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

Bromomethane	ND	0.0777		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Trichlorofluoromethane (CFC-11)	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Chloroethane	ND	0.0518		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1-Dichloroethene	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Methylene chloride	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
trans-1,2-Dichloroethene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Methyl tert-butyl ether (MTBE)	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1-Dichloroethane	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
2,2-Dichloropropane	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
cis-1,2-Dichloroethene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Chloroform	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1,1-Trichloroethane (TCA)	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1-Dichloropropene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Carbon tetrachloride	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2-Dichloroethane (EDC)	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Benzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Trichloroethene (TCE)	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2-Dichloropropane	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Bromodichloromethane	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Dibromomethane	ND	0.0345		mg/Kg-dry	1	5/25/2017 9:20:50 PM
cis-1,3-Dichloropropene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Toluene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
trans-1,3-Dichloropropylene	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1,2-Trichloroethane	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,3-Dichloropropane	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Tetrachloroethene (PCE)	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Dibromochloromethane	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2-Dibromoethane (EDB)	ND	0.00432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Chlorobenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1,1,2-Tetrachloroethane	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Ethylbenzene	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
m,p-Xylene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
o-Xylene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Styrene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Isopropylbenzene	ND	0.0691		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Bromoform	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,1,2,2-Tetrachloroethane	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
n-Propylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Bromobenzene	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-001  
**Client Sample ID:** 21417-GP5:1

**Collection Date:** 5/19/2017 8:30:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

1,3,5-Trimethylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
2-Chlorotoluene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
4-Chlorotoluene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
tert-Butylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2,3-Trichloropropane	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2,4-Trichlorobenzene	ND	0.0432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
sec-Butylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
4-Isopropyltoluene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,3-Dichlorobenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,4-Dichlorobenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
n-Butylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2-Dichlorobenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2-Dibromo-3-chloropropane	ND	0.432		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2,4-Trimethylbenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Hexachlorobutadiene	ND	0.0863		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Naphthalene	ND	0.0259		mg/Kg-dry	1	5/25/2017 9:20:50 PM
1,2,3-Trichlorobenzene	ND	0.0173		mg/Kg-dry	1	5/25/2017 9:20:50 PM
Surr: Dibromofluoromethane	92.5	56.5-129		%Rec	1	5/25/2017 9:20:50 PM
Surr: Toluene-d8	96.6	64.5-151		%Rec	1	5/25/2017 9:20:50 PM
Surr: 1-Bromo-4-fluorobenzene	95.8	63.1-141		%Rec	1	5/25/2017 9:20:50 PM

**Mercury by EPA Method 7471**

Batch ID: 17194      Analyst: WF

Mercury	ND	0.273		mg/Kg-dry	1	5/30/2017 5:26:11 PM
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**Total Metals by EPA Method 6020**

Batch ID: 17204      Analyst: TN

Arsenic	4.60	0.0891		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Barium	81.8	0.446		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Cadmium	ND	0.178		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Chromium	39.1	0.0891		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Lead	20.7	0.178		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Selenium	1.38	0.446		mg/Kg-dry	1	5/31/2017 1:14:15 PM
Silver	ND	0.0891		mg/Kg-dry	1	5/31/2017 1:14:15 PM

**Sample Moisture (Percent Moisture)**

Batch ID: R36324      Analyst: BB

Percent Moisture	13.7	0.500		wt%	1	5/23/2017 9:30:51 AM
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**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-002  
**Client Sample ID:** 21417-GP5:14

**Collection Date:** 5/19/2017 9:50:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 17145      Analyst: SB

Diesel (Fuel Oil)	ND	20.4		mg/Kg-dry	1	5/25/2017 8:16:48 AM
Heavy Oil	ND	50.9		mg/Kg-dry	1	5/25/2017 8:16:48 AM
Surr: 2-Fluorobiphenyl	88.6	50-150		%Rec	1	5/25/2017 8:16:48 AM
Surr: o-Terphenyl	83.4	50-150		%Rec	1	5/25/2017 8:16:48 AM

**Gasoline by NWTPH-Gx**

Batch ID: 17161      Analyst: EM

Gasoline	ND	3.71		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Surr: Toluene-d8	101	65-135		%Rec	1	5/25/2017 9:49:36 PM
Surr: 4-Bromofluorobenzene	98.3	65-135		%Rec	1	5/25/2017 9:49:36 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0445		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Chloromethane	ND	0.0445		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Vinyl chloride	ND	0.00148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Bromomethane	ND	0.0668		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Trichlorofluoromethane (CFC-11)	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Chloroethane	ND	0.0445		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1-Dichloroethene	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Methylene chloride	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
trans-1,2-Dichloroethene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Methyl tert-butyl ether (MTBE)	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1-Dichloroethane	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
2,2-Dichloropropane	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
cis-1,2-Dichloroethene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Chloroform	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1,1-Trichloroethane (TCA)	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1-Dichloropropene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Carbon tetrachloride	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2-Dichloroethane (EDC)	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Benzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Trichloroethene (TCE)	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2-Dichloropropane	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Bromodichloromethane	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Dibromomethane	ND	0.0297		mg/Kg-dry	1	5/25/2017 9:49:36 PM
cis-1,3-Dichloropropene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Toluene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
trans-1,3-Dichloropropylene	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-002  
**Client Sample ID:** 21417-GP5:14

**Collection Date:** 5/19/2017 9:50:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

1,1,2-Trichloroethane	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,3-Dichloropropane	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Tetrachloroethene (PCE)	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Dibromochloromethane	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2-Dibromoethane (EDB)	ND	0.00371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Chlorobenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1,1,2-Tetrachloroethane	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Ethylbenzene	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
m,p-Xylene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
o-Xylene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Styrene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Isopropylbenzene	ND	0.0594		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Bromoform	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,1,2,2-Tetrachloroethane	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
n-Propylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Bromobenzene	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,3,5-Trimethylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
2-Chlorotoluene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
4-Chlorotoluene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
tert-Butylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2,3-Trichloropropane	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2,4-Trichlorobenzene	ND	0.0371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
sec-Butylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
4-Isopropyltoluene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,3-Dichlorobenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,4-Dichlorobenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
n-Butylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2-Dichlorobenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2-Dibromo-3-chloropropane	ND	0.371		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2,4-Trimethylbenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Hexachlorobutadiene	ND	0.0742		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Naphthalene	ND	0.0223		mg/Kg-dry	1	5/25/2017 9:49:36 PM
1,2,3-Trichlorobenzene	ND	0.0148		mg/Kg-dry	1	5/25/2017 9:49:36 PM
Surr: Dibromofluoromethane	90.7	56.5-129		%Rec	1	5/25/2017 9:49:36 PM
Surr: Toluene-d8	95.5	64.5-151		%Rec	1	5/25/2017 9:49:36 PM
Surr: 1-Bromo-4-fluorobenzene	94.1	63.1-141		%Rec	1	5/25/2017 9:49:36 PM



**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-002  
**Client Sample ID:** 21417-GP5:14

**Collection Date:** 5/19/2017 9:50:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Sample Moisture (Percent Moisture)**

Batch ID: R36324 Analyst: BB

Percent Moisture	8.34	0.500		wt%	1	5/23/2017 9:30:51 AM
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**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-003  
**Client Sample ID:** 21417-GP6:18

**Collection Date:** 5/19/2017 10:30:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 17145      Analyst: SB

Diesel (Fuel Oil)	ND	19.0		mg/Kg-dry	1	5/25/2017 8:48:21 AM
Heavy Oil	ND	47.5		mg/Kg-dry	1	5/25/2017 8:48:21 AM
Surr: 2-Fluorobiphenyl	92.3	50-150		%Rec	1	5/25/2017 8:48:21 AM
Surr: o-Terphenyl	91.8	50-150		%Rec	1	5/25/2017 8:48:21 AM

**Gasoline by NWTPH-Gx**

Batch ID: 17161      Analyst: EM

Gasoline	ND	3.98		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Surr: Toluene-d8	103	65-135		%Rec	1	5/25/2017 10:18:13 PM
Surr: 4-Bromofluorobenzene	100	65-135		%Rec	1	5/25/2017 10:18:13 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0478		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Chloromethane	ND	0.0478		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Vinyl chloride	ND	0.00159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Bromomethane	ND	0.0717		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Trichlorofluoromethane (CFC-11)	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Chloroethane	ND	0.0478		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1-Dichloroethene	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Methylene chloride	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
trans-1,2-Dichloroethene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Methyl tert-butyl ether (MTBE)	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1-Dichloroethane	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
2,2-Dichloropropane	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
cis-1,2-Dichloroethene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Chloroform	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1,1-Trichloroethane (TCA)	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1-Dichloropropene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Carbon tetrachloride	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2-Dichloroethane (EDC)	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Benzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Trichloroethene (TCE)	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2-Dichloropropane	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Bromodichloromethane	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Dibromomethane	ND	0.0318		mg/Kg-dry	1	5/25/2017 10:18:13 PM
cis-1,3-Dichloropropene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Toluene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
trans-1,3-Dichloropropylene	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 10:30:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-003

**Matrix:** Soil

**Client Sample ID:** 21417-GP6:18

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161

Analyst: EM

1,1,2-Trichloroethane	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,3-Dichloropropane	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Tetrachloroethene (PCE)	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Dibromochloromethane	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2-Dibromoethane (EDB)	ND	0.00398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Chlorobenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1,1,2-Tetrachloroethane	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Ethylbenzene	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
m,p-Xylene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
o-Xylene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Styrene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Isopropylbenzene	ND	0.0637		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Bromoform	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,1,2,2-Tetrachloroethane	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
n-Propylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Bromobenzene	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,3,5-Trimethylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
2-Chlorotoluene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
4-Chlorotoluene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
tert-Butylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2,3-Trichloropropane	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2,4-Trichlorobenzene	ND	0.0398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
sec-Butylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
4-Isopropyltoluene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,3-Dichlorobenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,4-Dichlorobenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
n-Butylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2-Dichlorobenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2-Dibromo-3-chloropropane	ND	0.398		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2,4-Trimethylbenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Hexachlorobutadiene	ND	0.0796		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Naphthalene	ND	0.0239		mg/Kg-dry	1	5/25/2017 10:18:13 PM
1,2,3-Trichlorobenzene	ND	0.0159		mg/Kg-dry	1	5/25/2017 10:18:13 PM
Surr: Dibromofluoromethane	90.0	56.5-129		%Rec	1	5/25/2017 10:18:13 PM
Surr: Toluene-d8	94.8	64.5-151		%Rec	1	5/25/2017 10:18:13 PM
Surr: 1-Bromo-4-fluorobenzene	95.7	63.1-141		%Rec	1	5/25/2017 10:18:13 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 10:30:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-003

**Matrix:** Soil

**Client Sample ID:** 21417-GP6:18

<b>Analyses</b>	<b>Result</b>	<b>RL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**Sample Moisture (Percent Moisture)**

Batch ID: R36324     Analyst: BB

Percent Moisture	8.73	0.500		wt%	1	5/23/2017 9:30:51 AM
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**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 10:50:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP7:2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 17145 Analyst: SB

Diesel (Fuel Oil)	ND	22.0		mg/Kg-dry	1	5/25/2017 9:51:37 AM
Heavy Oil	99.2	54.9		mg/Kg-dry	1	5/25/2017 9:51:37 AM
Surr: 2-Fluorobiphenyl	89.9	50-150		%Rec	1	5/25/2017 9:51:37 AM
Surr: o-Terphenyl	88.7	50-150		%Rec	1	5/25/2017 9:51:37 AM

**Gasoline by NWTPH-Gx**

Batch ID: 17161 Analyst: EM

Gasoline	ND	4.74		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Surr: Toluene-d8	102	65-135		%Rec	1	5/25/2017 10:46:54 PM
Surr: 4-Bromofluorobenzene	97.0	65-135		%Rec	1	5/25/2017 10:46:54 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0568		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Chloromethane	ND	0.0568		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Vinyl chloride	ND	0.00189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Bromomethane	ND	0.0853		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Trichlorofluoromethane (CFC-11)	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Chloroethane	ND	0.0568		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1-Dichloroethene	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Methylene chloride	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
trans-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Methyl tert-butyl ether (MTBE)	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1-Dichloroethane	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
2,2-Dichloropropane	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
cis-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Chloroform	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1,1-Trichloroethane (TCA)	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1-Dichloropropene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Carbon tetrachloride	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2-Dichloroethane (EDC)	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Benzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Trichloroethene (TCE)	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2-Dichloropropane	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Bromodichloromethane	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Dibromomethane	ND	0.0379		mg/Kg-dry	1	5/25/2017 10:46:54 PM
cis-1,3-Dichloropropene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Toluene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
trans-1,3-Dichloropropylene	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 10:50:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP7:2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161

Analyst: EM

1,1,2-Trichloroethane	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,3-Dichloropropane	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Tetrachloroethene (PCE)	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Dibromochloromethane	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2-Dibromoethane (EDB)	ND	0.00474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Chlorobenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1,1,2-Tetrachloroethane	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Ethylbenzene	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
m,p-Xylene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
o-Xylene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Styrene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Isopropylbenzene	ND	0.0758		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Bromoform	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,1,2,2-Tetrachloroethane	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
n-Propylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Bromobenzene	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,3,5-Trimethylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
2-Chlorotoluene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
4-Chlorotoluene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
tert-Butylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2,3-Trichloropropane	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2,4-Trichlorobenzene	ND	0.0474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
sec-Butylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
4-Isopropyltoluene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,3-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,4-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
n-Butylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2-Dibromo-3-chloropropane	ND	0.474		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2,4-Trimethylbenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Hexachlorobutadiene	ND	0.0947		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Naphthalene	ND	0.0284		mg/Kg-dry	1	5/25/2017 10:46:54 PM
1,2,3-Trichlorobenzene	ND	0.0189		mg/Kg-dry	1	5/25/2017 10:46:54 PM
Surr: Dibromofluoromethane	81.3	56.5-129		%Rec	1	5/25/2017 10:46:54 PM
Surr: Toluene-d8	82.7	64.5-151		%Rec	1	5/25/2017 10:46:54 PM
Surr: 1-Bromo-4-fluorobenzene	92.9	63.1-141		%Rec	1	5/25/2017 10:46:54 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 10:50:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-004

**Matrix:** Soil

**Client Sample ID:** 21417-GP7:2

<b>Analyses</b>	<b>Result</b>	<b>RL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
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**Sample Moisture (Percent Moisture)**

Batch ID: R36324      Analyst: BB

Percent Moisture	10.2	0.500		wt%	1	5/23/2017 9:30:51 AM
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**Client:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II  
**Lab ID:** 1705249-005  
**Client Sample ID:** 21417-GP7:13

**Collection Date:** 5/19/2017 11:35:00 AM  
**Matrix:** Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Batch ID: 17145      Analyst: SB

Diesel (Fuel Oil)	ND	19.9		mg/Kg-dry	1	5/25/2017 10:55:10 AM
Heavy Oil	ND	49.7		mg/Kg-dry	1	5/25/2017 10:55:10 AM
Surr: 2-Fluorobiphenyl	85.9	50-150		%Rec	1	5/25/2017 10:55:10 AM
Surr: o-Terphenyl	83.3	50-150		%Rec	1	5/25/2017 10:55:10 AM

**Gasoline by NWTPH-Gx**

Batch ID: 17161      Analyst: EM

Gasoline	ND	4.03		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Surr: Toluene-d8	102	65-135		%Rec	1	5/25/2017 11:15:35 PM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	5/25/2017 11:15:35 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161      Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0484		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Chloromethane	ND	0.0484		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Vinyl chloride	ND	0.00161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Bromomethane	ND	0.0726		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Trichlorofluoromethane (CFC-11)	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Chloroethane	ND	0.0484		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1-Dichloroethene	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Methylene chloride	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
trans-1,2-Dichloroethene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Methyl tert-butyl ether (MTBE)	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1-Dichloroethane	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
2,2-Dichloropropane	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
cis-1,2-Dichloroethene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Chloroform	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1,1-Trichloroethane (TCA)	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1-Dichloropropene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Carbon tetrachloride	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2-Dichloroethane (EDC)	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Benzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Trichloroethene (TCE)	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2-Dichloropropane	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Bromodichloromethane	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Dibromomethane	ND	0.0323		mg/Kg-dry	1	5/25/2017 11:15:35 PM
cis-1,3-Dichloropropene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Toluene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
trans-1,3-Dichloropropylene	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 11:35:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-005

**Matrix:** Soil

**Client Sample ID:** 21417-GP7:13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: 17161

Analyst: EM

1,1,2-Trichloroethane	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,3-Dichloropropane	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Tetrachloroethene (PCE)	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Dibromochloromethane	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2-Dibromoethane (EDB)	ND	0.00403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Chlorobenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1,1,2-Tetrachloroethane	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Ethylbenzene	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
m,p-Xylene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
o-Xylene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Styrene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Isopropylbenzene	ND	0.0645		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Bromoform	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,1,2,2-Tetrachloroethane	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
n-Propylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Bromobenzene	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,3,5-Trimethylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
2-Chlorotoluene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
4-Chlorotoluene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
tert-Butylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2,3-Trichloropropane	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2,4-Trichlorobenzene	ND	0.0403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
sec-Butylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
4-Isopropyltoluene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,3-Dichlorobenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,4-Dichlorobenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
n-Butylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2-Dichlorobenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2-Dibromo-3-chloropropane	ND	0.403		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2,4-Trimethylbenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Hexachlorobutadiene	ND	0.0807		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Naphthalene	ND	0.0242		mg/Kg-dry	1	5/25/2017 11:15:35 PM
1,2,3-Trichlorobenzene	ND	0.0161		mg/Kg-dry	1	5/25/2017 11:15:35 PM
Surr: Dibromofluoromethane	91.4	56.5-129		%Rec	1	5/25/2017 11:15:35 PM
Surr: Toluene-d8	88.5	64.5-151		%Rec	1	5/25/2017 11:15:35 PM
Surr: 1-Bromo-4-fluorobenzene	94.6	63.1-141		%Rec	1	5/25/2017 11:15:35 PM



**Client:** Shannon & Wilson

**Collection Date:** 5/19/2017 11:35:00 AM

**Project:** 615 Dexter Ave N Phase II

**Lab ID:** 1705249-005

**Matrix:** Soil

**Client Sample ID:** 21417-GP7:13

**Analyses**

**Result**

**RL**

**Qual**

**Units**

**DF**

**Date Analyzed**

**Sample Moisture (Percent Moisture)**

Batch ID: R36324

Analyst: BB

Percent Moisture

11.4

0.500

wt%

1

5/23/2017 9:30:51 AM

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID <b>MB-17145</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698273</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.7		20.00		93.5	50	150				
Surr: o-Terphenyl	17.9		20.00		89.7	50	150				

Sample ID <b>LCS-17145</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698272</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	509	20.0	500.0	0	102	65	135				
Surr: 2-Fluorobiphenyl	19.5		20.00		97.5	50	150				
Surr: o-Terphenyl	21.1		20.00		106	50	150				

Sample ID <b>1705285-009ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698267</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.9						0		30	
Heavy Oil	ND	52.2						0		30	
Surr: 2-Fluorobiphenyl	19.7		20.89		94.2	50	150		0		
Surr: o-Terphenyl	19.5		20.89		93.3	50	150		0		

Sample ID <b>1705286-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698734</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	32.8						0		30	
Heavy Oil	ND	82.1						0		30	
Heavy Oil Range Organics (C24-37)	147	82.1						122.7	17.8	30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.**

Sample ID <b>1705286-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698734</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 2-Fluorobiphenyl	12.7		32.84		38.7	50	150		0		S
Surr: o-Terphenyl	13.0		32.84		39.7	50	150		0		S

**NOTES:**

S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.  
 Heavy Oil Range Organics - Indicates the presence of unresolved compounds in the Lube+ Oil ranges.

Sample ID <b>1705286-001AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698742</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	371	33.4	833.9	16.17	42.5	65	135				S
Surr: 2-Fluorobiphenyl	11.6		33.35		34.8	50	150				S
Surr: o-Terphenyl	11.4		33.35		34.2	50	150				S

**NOTES:**

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

Sample ID <b>1705286-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36405</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17145</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698735</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	236	32.1	802.5	16.17	27.4	65	135	370.9	44.6	30	RS
Surr: 2-Fluorobiphenyl	3.56		32.10		11.1	50	150		0		S
Surr: o-Terphenyl	4.24		32.10		13.2	50	150		0		S

**NOTES:**

S/R - Outlying spike recovery and high RPD observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.  
 S - Outlying surrogate recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID <b>LCS-17161</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>LCSS</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698105</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	27.7	5.00	25.00	0	111	65	135				
Surr: Toluene-d8	1.26		1.250		101	65	135				
Surr: 4-Bromofluorobenzene	1.25		1.250		99.9	65	135				

Sample ID <b>MB-17161</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>MBLKS</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698106</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.19		1.250		95.2	65	135				

Sample ID <b>1705238-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698099</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.60						0		30	
Surr: Toluene-d8	1.43		1.399		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.32		1.399		94.7	65	135		0		

Sample ID <b>1705238-003BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698993</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	20.4	5.63	28.17	0	72.4	65	135				
Surr: Toluene-d8	1.42		1.408		101	65	135				
Surr: 4-Bromofluorobenzene	1.47		1.408		105	65	135				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID <b>1705238-003BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698994</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	23.6	5.63	28.17	0	83.7	65	135	20.39	14.5	30	
Surr: Toluene-d8	1.43		1.408		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.47		1.408		105	65	135		0		

Sample ID <b>1705255-011BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>				Prep Date: <b>5/24/2017</b>	RunNo: <b>36397</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>					Analysis Date: <b>5/26/2017</b>	SeqNo: <b>699003</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.27						0		30	
Surr: Toluene-d8	1.35		1.319		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.28		1.319		96.9	65	135		0		

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Mercury by EPA Method 7471**

Sample ID <b>MB-17194</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36459</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17194</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699623</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.250

Sample ID <b>LCS-17194</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36459</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17194</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699624</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.514 0.250 0.5000 0 103 80 120

Sample ID <b>1705268-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36459</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17194</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699626</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.285 0 20

Sample ID <b>1705268-001AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36459</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17194</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699627</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.609 0.280 0.5598 0.03470 103 70 130

Sample ID <b>1705268-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/30/2017</b>	RunNo: <b>36459</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17194</b>	Analysis Date: <b>5/30/2017</b>	SeqNo: <b>699628</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.592 0.280 0.5598 0.03470 99.6 70 130 0.6090 2.80 20

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>MB-17130</b>	SampType: <b>MBLK</b>	Units: <b>µg/Kg</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>17130</b>		Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696373</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	40.0									
2-Methylnaphthalene	ND	40.0									
1-Methylnaphthalene	ND	40.0									
Acenaphthylene	ND	40.0									
Acenaphthene	ND	40.0									
Fluorene	ND	40.0									
Phenanthrene	ND	40.0									
Anthracene	ND	40.0									
Fluoranthene	ND	40.0									
Pyrene	ND	40.0									
Benz(a)anthracene	ND	40.0									
Chrysene	ND	40.0									
Benzo(b)fluoranthene	ND	40.0									
Benzo(k)fluoranthene	ND	40.0									
Benzo(a)pyrene	ND	40.0									
Indeno(1,2,3-cd)pyrene	ND	40.0									
Dibenz(a,h)anthracene	ND	40.0									
Benzo(g,h,i)perylene	ND	40.0									
Surr: 2-Fluorobiphenyl	479		500.0		95.8	24.5	139				
Surr: Terphenyl-d14 (surr)	591		500.0		118	44.3	176				

Sample ID <b>LCS-17130</b>	SampType: <b>LCS</b>	Units: <b>µg/Kg</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>
Client ID: <b>LCSS</b>	Batch ID: <b>17130</b>		Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696374</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,180	40.0	1,000	0	118	46.4	125				
2-Methylnaphthalene	1,220	40.0	1,000	0	122	45.1	135				
1-Methylnaphthalene	1,220	40.0	1,000	0	122	46.2	133				
Acenaphthylene	1,260	40.0	1,000	0	126	32.8	136				
Acenaphthene	1,210	40.0	1,000	0	121	38.7	129				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>LCS-17130</b>	SampType: <b>LCS</b>	Units: <b>µg/Kg</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17130</b>		Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696374</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluorene	1,290	40.0	1,000	0	129	41.4	144				
Phenanthrene	1,310	40.0	1,000	0	131	43.9	133				
Anthracene	1,320	40.0	1,000	0	132	44.2	136				
Fluoranthene	1,330	40.0	1,000	0	133	45.9	137				
Pyrene	1,330	40.0	1,000	0	133	46.2	137				
Benz(a)anthracene	1,370	40.0	1,000	0	137	41.2	141				
Chrysene	1,300	40.0	1,000	0	130	46.9	138				
Benzo(b)fluoranthene	1,310	40.0	1,000	0	131	41	155				
Benzo(k)fluoranthene	1,290	40.0	1,000	0	129	41.8	153				
Benzo(a)pyrene	1,340	40.0	1,000	0	134	34.3	157				
Indeno(1,2,3-cd)pyrene	1,150	40.0	1,000	0	115	31.3	159				
Dibenz(a,h)anthracene	1,140	40.0	1,000	0	114	28	158				
Benzo(g,h,i)perylene	1,140	40.0	1,000	0	114	32.4	144				
Surr: 2-Fluorobiphenyl	505		500.0		101	24.5	139				
Surr: Terphenyl-d14 (surr)	610		500.0		122	44.3	176				

Sample ID <b>1705245-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17130</b>		Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696376</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	39.5						0		30	
2-Methylnaphthalene	ND	39.5						0		30	
1-Methylnaphthalene	ND	39.5						0		30	
Acenaphthylene	ND	39.5						0		30	
Acenaphthene	ND	39.5						0		30	
Fluorene	ND	39.5						0		30	
Phenanthrene	ND	39.5						0		30	
Anthracene	ND	39.5						0		30	
Fluoranthene	ND	39.5						0		30	
Pyrene	ND	39.5						0		30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>1705245-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/Kg-dry</b>				Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17130</b>					Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696376</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	ND	39.5						0		30	
Chrysene	ND	39.5						0		30	
Benzo(b)fluoranthene	ND	39.5						0		30	
Benzo(k)fluoranthene	ND	39.5						0		30	
Benzo(a)pyrene	ND	39.5						0		30	
Indeno(1,2,3-cd)pyrene	ND	39.5						0		30	
Dibenz(a,h)anthracene	ND	39.5						0		30	
Benzo(g,h,i)perylene	ND	39.5						0		30	
Surr: 2-Fluorobiphenyl	432		493.4		87.6	24.5	139		0		
Surr: Terphenyl-d14 (surr)	460		493.4		93.3	44.3	176		0		

Sample ID <b>1705245-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/Kg-dry</b>				Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>17130</b>					Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696377</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,020	40.7	1,018	0	100	42.9	138				
2-Methylnaphthalene	1,060	40.7	1,018	0	104	42.8	151				
1-Methylnaphthalene	1,050	40.7	1,018	0	104	41.6	148				
Acenaphthylene	1,120	40.7	1,018	4.232	109	32.6	160				
Acenaphthene	1,060	40.7	1,018	0	104	46.3	142				
Fluorene	1,120	40.7	1,018	0	110	43.4	153				
Phenanthrene	1,130	40.7	1,018	0	111	45.5	140				
Anthracene	1,180	40.7	1,018	4.059	116	32.6	160				
Fluoranthene	1,200	40.7	1,018	4.207	117	44.6	161				
Pyrene	1,180	40.7	1,018	6.431	115	48.3	158				
Benz(a)anthracene	1,210	40.7	1,018	8.617	118	34.9	139				
Chrysene	1,110	40.7	1,018	0	109	45.2	146				
Benzo(b)fluoranthene	1,240	40.7	1,018	8.568	121	42.2	168				
Benzo(k)fluoranthene	1,150	40.7	1,018	5.648	113	34.8	147				
Benzo(a)pyrene	1,280	40.7	1,018	8.693	125	34.4	179				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID <b>1705245-001AMS</b>	SampType: <b>MS</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17130</b>	Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696377</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	992	40.7	1,018	5.974	96.8	5	113				
Dibenz(a,h)anthracene	978	40.7	1,018	6.070	95.5	17.3	156				
Benzo(g,h,i)perylene	950	40.7	1,018	14.23	91.9	24.9	119				
Surr: 2-Fluorobiphenyl	471		508.9		92.6	24.5	139				
Surr: Terphenyl-d14 (surr)	506		508.9		99.4	44.3	176				

Sample ID <b>1705245-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/Kg-dry</b>	Prep Date: <b>5/22/2017</b>	RunNo: <b>36329</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17130</b>	Analysis Date: <b>5/22/2017</b>	SeqNo: <b>696378</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	1,030	42.1	1,052	0	97.9	42.9	138	1,022	0.780	30	
2-Methylnaphthalene	1,070	42.1	1,052	0	101	42.8	151	1,062	0.357	30	
1-Methylnaphthalene	1,060	42.1	1,052	0	101	41.6	148	1,054	0.368	30	
Acenaphthylene	1,120	42.1	1,052	4.232	106	32.6	160	1,116	0.442	30	
Acenaphthene	1,060	42.1	1,052	0	100	46.3	142	1,057	0.148	30	
Fluorene	1,120	42.1	1,052	0	107	43.4	153	1,121	0.192	30	
Phenanthrene	1,130	42.1	1,052	0	107	45.5	140	1,126	0.302	30	
Anthracene	1,180	42.1	1,052	4.059	112	32.6	160	1,182	0.210	30	
Fluoranthene	1,190	42.1	1,052	4.207	113	44.6	161	1,197	0.319	30	
Pyrene	1,170	42.1	1,052	6.431	111	48.3	158	1,177	0.375	30	
Benz(a)anthracene	1,190	42.1	1,052	8.617	112	34.9	139	1,206	1.58	30	
Chrysene	1,110	42.1	1,052	0	105	45.2	146	1,111	0.438	30	
Benzo(b)fluoranthene	1,270	42.1	1,052	8.568	120	42.2	168	1,235	2.72	30	
Benzo(k)fluoranthene	1,120	42.1	1,052	5.648	106	34.8	147	1,155	3.19	30	
Benzo(a)pyrene	1,270	42.1	1,052	8.693	120	34.4	179	1,281	0.715	30	
Indeno(1,2,3-cd)pyrene	995	42.1	1,052	5.974	94.0	5	113	991.7	0.358	30	
Dibenz(a,h)anthracene	981	42.1	1,052	6.070	92.6	17.3	156	978.2	0.247	30	
Benzo(g,h,i)perylene	950	42.1	1,052	14.23	88.9	24.9	119	949.7	0.0113	30	
Surr: 2-Fluorobiphenyl	473		526.0		89.9	24.5	139		0		
Surr: Terphenyl-d14 (surr)	493		526.0		93.8	44.3	176		0		



**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Polyaromatic Hydrocarbons by EPA Method 8270 (SIM)**

Sample ID	<b>1705245-001AMSD</b>	SampType:	<b>MSD</b>	Units:	<b>µg/Kg-dry</b>	Prep Date:	<b>5/22/2017</b>	RunNo:	<b>36329</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>17130</b>			Analysis Date:	<b>5/22/2017</b>	SeqNo:	<b>696378</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Sample Moisture (Percent Moisture)**

Sample ID <b>1705239-030ADUP</b>	SampType: <b>DUP</b>	Units: <b>wt%</b>	Prep Date: <b>5/23/2017</b>	RunNo: <b>36324</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R36324</b>		Analysis Date: <b>5/23/2017</b>	SeqNo: <b>696272</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	20.8	0.500						21.31	2.26	20	

Sample ID <b>1705249-005ADUP</b>	SampType: <b>DUP</b>	Units: <b>wt%</b>	Prep Date: <b>5/23/2017</b>	RunNo: <b>36324</b>							
Client ID: <b>21417-GP7:13</b>	Batch ID: <b>R36324</b>		Analysis Date: <b>5/23/2017</b>	SeqNo: <b>696297</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	11.3	0.500						11.39	1.08	20	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID <b>MB-17204</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17204</b>		Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700129</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.0769									
Barium	ND	0.385									
Cadmium	ND	0.154									
Chromium	ND	0.0769									
Lead	ND	0.154									
Selenium	ND	0.385									
Silver	ND	0.0769									

Sample ID <b>LCS-17204</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17204</b>		Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700130</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	38.3	0.0758	37.88	0	101	80	120				
Barium	39.8	0.379	37.88	0	105	80	120				
Cadmium	1.90	0.152	1.894	0	101	80	120				
Chromium	39.4	0.0758	37.88	0	104	80	120				
Lead	20.2	0.152	18.94	0	107	80	120				
Selenium	3.60	0.379	3.788	0	95.1	80	120				
Silver	8.91	0.0758	9.470	0	94.0	80	120				

Sample ID <b>1705249-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>							
Client ID: <b>21417-GP5:1</b>	Batch ID: <b>17204</b>		Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700134</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	5.32	0.0905						4.596	14.6	20	
Barium	81.4	0.452						81.77	0.424	20	
Cadmium	0.187	0.181						0.1745	6.77	20	
Chromium	41.3	0.0905						39.13	5.39	20	
Lead	24.2	0.181						20.70	15.4	20	
Selenium	1.64	0.452						1.382	17.1	20	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Total Metals by EPA Method 6020**

Sample ID <b>1705249-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>					
Client ID: <b>21417-GP5:1</b>	Batch ID: <b>17204</b>				Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700134</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Silver	ND	0.0905						0		20	

Sample ID <b>1705249-001AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>					
Client ID: <b>21417-GP5:1</b>	Batch ID: <b>17204</b>				Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700136</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.3	0.0898	44.90	4.596	95.2	75	125				
Barium	124	0.449	44.90	81.77	93.2	75	125				
Cadmium	2.34	0.180	2.245	0.1745	96.5	75	125				
Chromium	85.2	0.0898	44.90	39.13	103	75	125				
Lead	30.1	0.180	22.45	20.70	41.8	75	125				S
Selenium	5.19	0.449	4.490	1.382	84.9	75	125				
Silver	8.57	0.0898	11.22	0.04856	75.9	75	125				

**NOTES:**

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

Sample ID <b>1705249-001AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>			Prep Date: <b>5/31/2017</b>	RunNo: <b>36492</b>					
Client ID: <b>21417-GP5:1</b>	Batch ID: <b>17204</b>				Analysis Date: <b>5/31/2017</b>	SeqNo: <b>700137</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.9	0.0884	44.21	4.596	100	75	125	47.34	3.20	20	
Barium	112	0.442	44.21	81.77	68.2	75	125	123.6	9.96	20	S
Cadmium	2.41	0.177	2.211	0.1745	101	75	125	2.340	2.90	20	
Chromium	79.2	0.0884	44.21	39.13	90.6	75	125	85.17	7.26	20	
Lead	30.4	0.177	22.11	20.70	44.0	75	125	30.08	1.17	20	S
Selenium	4.95	0.442	4.421	1.382	80.7	75	125	5.194	4.83	20	
Silver	8.19	0.0884	11.05	0.04856	73.6	75	125	8.567	4.53	20	S

**NOTES:**

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

S - Outlying spike recovery(ies) observed (Ag, Ba). A duplicate analysis was performed and recovered within range.

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>LCS-17161</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>LCSS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698118</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.51	0.0600	1.000	0	151	14.3	167				
Chloromethane	1.42	0.0600	1.000	0	142	46	144				
Vinyl chloride	1.15	0.00200	1.000	0	115	44	142				
Bromomethane	0.947	0.0900	1.000	0	94.7	40.9	157				
Trichlorofluoromethane (CFC-11)	0.785	0.0500	1.000	0	78.5	36.9	156				
Chloroethane	0.997	0.0600	1.000	0	99.7	33.4	155				
1,1-Dichloroethene	0.960	0.0500	1.000	0	96.0	49.7	142				
Methylene chloride	1.22	0.0200	1.000	0	122	46.3	140				
trans-1,2-Dichloroethene	1.15	0.0200	1.000	0	115	68	130				
Methyl tert-butyl ether (MTBE)	1.19	0.0500	1.000	0	119	66.3	145				
1,1-Dichloroethane	0.888	0.0200	1.000	0	88.8	61.9	137				
2,2-Dichloropropane	1.22	0.0500	1.000	0	122	35.5	186				
cis-1,2-Dichloroethene	1.04	0.0200	1.000	0	104	71.3	135				
Chloroform	0.996	0.0200	1.000	0	99.6	69	145				
1,1,1-Trichloroethane (TCA)	0.936	0.0200	1.000	0	93.6	69	132				
1,1-Dichloropropene	1.07	0.0200	1.000	0	107	72.7	131				
Carbon tetrachloride	0.946	0.0200	1.000	0	94.6	63.4	137				
1,2-Dichloroethane (EDC)	1.05	0.0300	1.000	0	105	50.9	162				
Benzene	1.07	0.0200	1.000	0	107	64.3	133				
Trichloroethene (TCE)	0.969	0.0200	1.000	0	96.9	65.5	137				
1,2-Dichloropropane	0.995	0.0200	1.000	0	99.5	63.2	142				
Bromodichloromethane	0.836	0.0200	1.000	0	83.6	73.2	131				
Dibromomethane	0.917	0.0400	1.000	0	91.7	60.1	146				
cis-1,3-Dichloropropene	0.996	0.0200	1.000	0	99.6	59.1	143				
Toluene	1.02	0.0200	1.000	0	102	67.3	138				
trans-1,3-Dichloropropylene	0.959	0.0300	1.000	0	95.9	49.2	149				
1,1,2-Trichloroethane	0.946	0.0300	1.000	0	94.6	56.9	147				
1,3-Dichloropropane	0.972	0.0500	1.000	0	97.2	56.1	153				
Tetrachloroethene (PCE)	1.03	0.0200	1.000	0	103	52.7	150				
Dibromochloromethane	0.847	0.0300	1.000	0	84.7	70.6	144				
1,2-Dibromoethane (EDB)	0.946	0.00500	1.000	0	94.6	50.5	154				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>LCS-17161</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>LCSS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698118</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.04	0.0200	1.000	0	104	76.1	123				
1,1,1,2-Tetrachloroethane	0.917	0.0300	1.000	0	91.7	65.9	141				
Ethylbenzene	1.04	0.0300	1.000	0	104	74	129				
m,p-Xylene	2.10	0.0200	2.000	0	105	70	124				
o-Xylene	1.05	0.0200	1.000	0	105	68.1	139				
Styrene	1.02	0.0200	1.000	0	102	73.3	146				
Isopropylbenzene	1.04	0.0800	1.000	0	104	70	130				
Bromoform	0.684	0.0200	1.000	0	68.4	67	154				
1,1,2,2-Tetrachloroethane	0.898	0.0200	1.000	0	89.8	44.8	165				
n-Propylbenzene	1.03	0.0200	1.000	0	103	74.8	125				
Bromobenzene	0.977	0.0300	1.000	0	97.7	49.2	144				
1,3,5-Trimethylbenzene	1.00	0.0200	1.000	0	100	74.6	123				
2-Chlorotoluene	1.01	0.0200	1.000	0	101	76.7	129				
4-Chlorotoluene	1.02	0.0200	1.000	0	102	77.5	125				
tert-Butylbenzene	1.02	0.0200	1.000	0	102	66.2	130				
1,2,3-Trichloropropane	0.941	0.0200	1.000	0	94.1	67.9	136				
1,2,4-Trichlorobenzene	1.17	0.0500	1.000	0	117	62.6	143				
sec-Butylbenzene	1.06	0.0200	1.000	0	106	75.6	133				
4-Isopropyltoluene	1.06	0.0200	1.000	0	106	76.8	131				
1,3-Dichlorobenzene	1.06	0.0200	1.000	0	106	72.8	128				
1,4-Dichlorobenzene	1.07	0.0200	1.000	0	107	72.6	126				
n-Butylbenzene	1.15	0.0200	1.000	0	115	65.3	136				
1,2-Dichlorobenzene	1.02	0.0200	1.000	0	102	72.8	126				
1,2-Dibromo-3-chloropropane	0.700	0.500	1.000	0	70.0	40.2	155				
1,2,4-Trimethylbenzene	0.996	0.0200	1.000	0	99.6	77.5	129				
Hexachlorobutadiene	1.14	0.100	1.000	0	114	42	151				
Naphthalene	1.16	0.0300	1.000	0	116	58.4	160				
1,2,3-Trichlorobenzene	1.17	0.0200	1.000	0	117	54.8	143				
Surr: Dibromofluoromethane	1.15		1.250		92.2	56.5	129				
Surr: Toluene-d8	1.23		1.250		98.1	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		101	63.1	141				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>LCS-17161</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698118</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>MB-17161</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698119</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>MB-17161</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698119</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>MB-17161</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>MBLKS</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698119</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	0.861		1.250		68.9	56.5	129				
Surr: Toluene-d8	1.15		1.250		91.8	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	1.14		1.250		91.2	63.1	141				

Sample ID <b>1705238-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698112</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0671						0		30	
Chloromethane	ND	0.0671						0.09612	200	30	R
Vinyl chloride	ND	0.00224						0		30	
Bromomethane	ND	0.101						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0560						0		30	
Chloroethane	ND	0.0671						0		30	
1,1-Dichloroethene	ND	0.0560						0		30	
Methylene chloride	ND	0.0224						0		30	
trans-1,2-Dichloroethene	ND	0.0224						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0560						0		30	
1,1-Dichloroethane	ND	0.0224						0		30	
2,2-Dichloropropane	ND	0.0560						0		30	
cis-1,2-Dichloroethene	ND	0.0224						0		30	
Chloroform	ND	0.0224						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0224						0		30	
1,1-Dichloropropene	ND	0.0224						0		30	
Carbon tetrachloride	ND	0.0224						0		30	
1,2-Dichloroethane (EDC)	ND	0.0336						0		30	
Benzene	ND	0.0224						0		30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705238-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698112</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene (TCE)	ND	0.0224						0		30	
1,2-Dichloropropane	ND	0.0224						0		30	
Bromodichloromethane	ND	0.0224						0		30	
Dibromomethane	ND	0.0448						0		30	
cis-1,3-Dichloropropene	ND	0.0224						0		30	
Toluene	ND	0.0224						0		30	
trans-1,3-Dichloropropylene	ND	0.0336						0		30	
1,1,2-Trichloroethane	ND	0.0336						0		30	
1,3-Dichloropropane	ND	0.0560						0		30	
Tetrachloroethene (PCE)	ND	0.0224						0		30	
Dibromochloromethane	ND	0.0336						0		30	
1,2-Dibromoethane (EDB)	ND	0.00560						0		30	
Chlorobenzene	ND	0.0224						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0336						0		30	
Ethylbenzene	ND	0.0336						0		30	
m,p-Xylene	ND	0.0224						0		30	
o-Xylene	ND	0.0224						0		30	
Styrene	ND	0.0224						0		30	
Isopropylbenzene	ND	0.0895						0		30	
Bromoform	ND	0.0224						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0224						0		30	
n-Propylbenzene	ND	0.0224						0		30	
Bromobenzene	ND	0.0336						0		30	
1,3,5-Trimethylbenzene	ND	0.0224						0.03933	200	30	R
2-Chlorotoluene	ND	0.0224						0		30	
4-Chlorotoluene	ND	0.0224						0		30	
tert-Butylbenzene	ND	0.0224						0		30	
1,2,3-Trichloropropane	ND	0.0224						0		30	
1,2,4-Trichlorobenzene	ND	0.0560						0		30	
sec-Butylbenzene	ND	0.0224						0		30	
4-Isopropyltoluene	ND	0.0224						0		30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705238-001BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698112</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,3-Dichlorobenzene	ND	0.0224						0		30	
1,4-Dichlorobenzene	ND	0.0224						0		30	
n-Butylbenzene	ND	0.0224						0		30	
1,2-Dichlorobenzene	ND	0.0224						0		30	
1,2-Dibromo-3-chloropropane	ND	0.560						0		30	
1,2,4-Trimethylbenzene	ND	0.0224						0.04075	200	30	R
Hexachlorobutadiene	ND	0.112						0		30	
Naphthalene	ND	0.0336						0		30	
1,2,3-Trichlorobenzene	ND	0.0224						0		30	
Surr: Dibromofluoromethane	1.22		1.399		87.1	56.5	129		0		
Surr: Toluene-d8	1.33		1.399		95.3	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	1.26		1.399		90.3	63.1	141		0		

**NOTES:**

R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID <b>1705237-017BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698978</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.727	0.0341	0.5691	0	128	43.5	121				S
Chloromethane	0.715	0.0341	0.5691	0	126	45	130				
Vinyl chloride	0.571	0.00114	0.5691	0	100	51.2	146				
Bromomethane	0.515	0.0512	0.5691	0	90.5	21.3	120				
Trichlorofluoromethane (CFC-11)	0.515	0.0285	0.5691	0	90.6	35	131				
Chloroethane	0.591	0.0341	0.5691	0	104	31.9	123				
1,1-Dichloroethene	0.561	0.0285	0.5691	0	98.5	61.9	141				
Methylene chloride	0.633	0.0114	0.5691	0	111	54.7	142				
trans-1,2-Dichloroethene	0.594	0.0114	0.5691	0	104	52	136				
Methyl tert-butyl ether (MTBE)	0.655	0.0285	0.5691	0	115	54.4	132				
1,1-Dichloroethane	0.570	0.0114	0.5691	0	100	51.8	141				
2,2-Dichloropropane	0.393	0.0285	0.5691	0	69.1	36	123				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705237-017BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698978</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,2-Dichloroethene	0.562	0.0114	0.5691	0	98.7	58.6	136				
Chloroform	0.561	0.0114	0.5691	0	98.6	53.2	129				
1,1,1-Trichloroethane (TCA)	0.490	0.0114	0.5691	0	86.1	58.3	145				
1,1-Dichloropropene	0.511	0.0114	0.5691	0	89.9	55.1	138				
Carbon tetrachloride	0.456	0.0114	0.5691	0	80.2	53.3	144				
1,2-Dichloroethane (EDC)	0.626	0.0171	0.5691	0	110	51.3	139				
Benzene	0.580	0.0114	0.5691	0	102	63.5	133				
Trichloroethene (TCE)	0.533	0.0114	0.5691	0	93.7	68.6	132				
1,2-Dichloropropane	0.540	0.0114	0.5691	0	94.9	59	136				
Bromodichloromethane	0.501	0.0114	0.5691	0	88.1	50.7	141				
Dibromomethane	0.546	0.0228	0.5691	0	96.0	50.6	137				
cis-1,3-Dichloropropene	0.550	0.0114	0.5691	0	96.7	50.4	138				
Toluene	0.541	0.0114	0.5691	0	95.1	63.4	132				
trans-1,3-Dichloropropylene	0.550	0.0171	0.5691	0	96.7	44.1	147				
1,1,2-Trichloroethane	0.554	0.0171	0.5691	0	97.3	51.6	137				
1,3-Dichloropropane	0.564	0.0285	0.5691	0	99.0	53.1	134				
Tetrachloroethene (PCE)	0.527	0.0114	0.5691	0	92.6	35.6	158				
Dibromochloromethane	0.535	0.0171	0.5691	0	94.1	55.3	140				
1,2-Dibromoethane (EDB)	0.557	0.00285	0.5691	0	97.9	50.4	136				
Chlorobenzene	0.547	0.0114	0.5691	0	96.1	60	133				
1,1,1,2-Tetrachloroethane	0.521	0.0171	0.5691	0	91.6	53.1	142				
Ethylbenzene	0.535	0.0171	0.5691	0	94.1	54.5	134				
m,p-Xylene	1.08	0.0114	1.138	0	94.6	53.1	132				
o-Xylene	0.541	0.0114	0.5691	0	95.0	53.3	139				
Styrene	0.539	0.0114	0.5691	0	94.7	51.1	132				
Isopropylbenzene	0.518	0.0455	0.5691	0	91.0	58.9	138				
Bromoform	0.458	0.0114	0.5691	0	80.4	57.9	130				
1,1,1,2,2-Tetrachloroethane	0.564	0.0114	0.5691	0	99.1	51.9	131				
n-Propylbenzene	0.519	0.0114	0.5691	0	91.1	53.6	140				
Bromobenzene	0.552	0.0171	0.5691	0	96.9	54.2	140				
1,3,5-Trimethylbenzene	0.518	0.0114	0.5691	0	91.1	51.8	136				

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705237-017BMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698978</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

2-Chlorotoluene	0.537	0.0114	0.5691	0	94.4	51.6	136				
4-Chlorotoluene	0.540	0.0114	0.5691	0	94.9	50.1	139				
tert-Butylbenzene	0.512	0.0114	0.5691	0	90.0	50.5	135				
1,2,3-Trichloropropane	0.588	0.0114	0.5691	0	103	50.5	131				
1,2,4-Trichlorobenzene	0.590	0.0285	0.5691	0	104	50.8	130				
sec-Butylbenzene	0.527	0.0114	0.5691	0	92.5	52.6	141				
4-Isopropyltoluene	0.534	0.0114	0.5691	0	93.9	52.9	134				
1,3-Dichlorobenzene	0.565	0.0114	0.5691	0	99.2	52.6	131				
1,4-Dichlorobenzene	0.561	0.0114	0.5691	0	98.6	52.9	129				
n-Butylbenzene	0.520	0.0114	0.5691	0	91.4	52.6	130				
1,2-Dichlorobenzene	0.561	0.0114	0.5691	0	98.6	55.8	129				
1,2-Dibromo-3-chloropropane	0.512	0.285	0.5691	0	89.9	40.5	131				
1,2,4-Trimethylbenzene	0.522	0.0114	0.5691	0	91.7	50.6	137				
Hexachlorobutadiene	0.487	0.0569	0.5691	0	85.6	40.6	158				
Naphthalene	0.655	0.0171	0.5691	0	115	52.3	124				
1,2,3-Trichlorobenzene	0.620	0.0114	0.5691	0	109	54.4	124				
Surr: Dibromofluoromethane	0.704		0.7114		98.9	56.5	129				
Surr: Toluene-d8	0.718		0.7114		101	64.5	151				
Surr: 1-Bromo-4-fluorobenzene	0.755		0.7114		106	63.1	141				

Sample ID <b>1705237-017BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698979</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.760	0.0341	0.5691	0	134	43.5	121	0.7268	4.45	30	S
Chloromethane	0.752	0.0341	0.5691	0	132	45	130	0.7147	5.14	30	S
Vinyl chloride	0.634	0.00114	0.5691	0	111	51.2	146	0.5705	10.5	30	
Bromomethane	0.519	0.0512	0.5691	0	91.1	21.3	120	0.5153	0.614	30	
Trichlorofluoromethane (CFC-11)	0.537	0.0285	0.5691	0	94.4	35	131	0.5155	4.13	30	
Chloroethane	0.558	0.0341	0.5691	0	98.0	31.9	123	0.5913	5.88	30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705237-017BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698979</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.575	0.0285	0.5691	0	101	61.9	141	0.5605	2.61	30	
Methylene chloride	0.607	0.0114	0.5691	0	107	54.7	142	0.6330	4.19	30	
trans-1,2-Dichloroethene	0.578	0.0114	0.5691	0	102	52	136	0.5938	2.68	30	
Methyl tert-butyl ether (MTBE)	0.633	0.0285	0.5691	0	111	54.4	132	0.6545	3.27	30	
1,1-Dichloroethane	0.587	0.0114	0.5691	0	103	51.8	141	0.5697	2.93	30	
2,2-Dichloropropane	0.405	0.0285	0.5691	0	71.1	36	123	0.3931	2.91	30	
cis-1,2-Dichloroethene	0.552	0.0114	0.5691	0	97.0	58.6	136	0.5619	1.77	30	
Chloroform	0.554	0.0114	0.5691	0	97.4	53.2	129	0.5610	1.22	30	
1,1,1-Trichloroethane (TCA)	0.504	0.0114	0.5691	0	88.6	58.3	145	0.4902	2.81	30	
1,1-Dichloropropene	0.516	0.0114	0.5691	0	90.6	55.1	138	0.5114	0.835	30	
Carbon tetrachloride	0.458	0.0114	0.5691	0	80.5	53.3	144	0.4561	0.427	30	
1,2-Dichloroethane (EDC)	0.551	0.0171	0.5691	0	96.8	51.3	139	0.6257	12.8	30	
Benzene	0.553	0.0114	0.5691	0	97.1	63.5	133	0.5800	4.84	30	
Trichloroethene (TCE)	0.586	0.0114	0.5691	0	103	68.6	132	0.5331	9.52	30	
1,2-Dichloropropane	0.537	0.0114	0.5691	0	94.4	59	136	0.5398	0.512	30	
Bromodichloromethane	0.484	0.0114	0.5691	0	85.1	50.7	141	0.5011	3.37	30	
Dibromomethane	0.530	0.0228	0.5691	0	93.1	50.6	137	0.5463	3.04	30	
cis-1,3-Dichloropropene	0.537	0.0114	0.5691	0	94.4	50.4	138	0.5504	2.39	30	
Toluene	0.538	0.0114	0.5691	0	94.6	63.4	132	0.5412	0.527	30	
trans-1,3-Dichloropropylene	0.536	0.0171	0.5691	0	94.2	44.1	147	0.5503	2.62	30	
1,1,2-Trichloroethane	0.533	0.0171	0.5691	0	93.6	51.6	137	0.5536	3.82	30	
1,3-Dichloropropane	0.548	0.0285	0.5691	0	96.3	53.1	134	0.5635	2.73	30	
Tetrachloroethene (PCE)	0.511	0.0114	0.5691	0	89.8	35.6	158	0.5267	3.05	30	
Dibromochloromethane	0.514	0.0171	0.5691	0	90.3	55.3	140	0.5355	4.10	30	
1,2-Dibromoethane (EDB)	0.544	0.00285	0.5691	0	95.7	50.4	136	0.5574	2.35	30	
Chlorobenzene	0.550	0.0114	0.5691	0	96.6	60	133	0.5467	0.538	30	
1,1,1,2-Tetrachloroethane	0.521	0.0171	0.5691	0	91.6	53.1	142	0.5210	0.0602	30	
Ethylbenzene	0.543	0.0171	0.5691	0	95.4	54.5	134	0.5354	1.35	30	
m,p-Xylene	1.09	0.0114	1.138	0	95.4	53.1	132	1.077	0.831	30	
o-Xylene	0.553	0.0114	0.5691	0	97.2	53.3	139	0.5409	2.27	30	
Styrene	0.540	0.0114	0.5691	0	94.8	51.1	132	0.5390	0.0984	30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705237-017BMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/25/2017</b>	SeqNo: <b>698979</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Isopropylbenzene	0.534	0.0455	0.5691	0	93.8	58.9	138	0.5177	3.12	30	
Bromoform	0.446	0.0114	0.5691	0	78.5	57.9	130	0.4576	2.47	30	
1,1,2,2-Tetrachloroethane	0.541	0.0114	0.5691	0	95.1	51.9	131	0.5639	4.08	30	
n-Propylbenzene	0.534	0.0114	0.5691	0	93.8	53.6	140	0.5185	2.92	30	
Bromobenzene	0.552	0.0171	0.5691	0	96.9	54.2	140	0.5516	0.00965	30	
1,3,5-Trimethylbenzene	0.527	0.0114	0.5691	0	92.7	51.8	136	0.5184	1.71	30	
2-Chlorotoluene	0.540	0.0114	0.5691	0	94.9	51.6	136	0.5372	0.582	30	
4-Chlorotoluene	0.545	0.0114	0.5691	0	95.7	50.1	139	0.5402	0.868	30	
tert-Butylbenzene	0.522	0.0114	0.5691	0	91.7	50.5	135	0.5123	1.83	30	
1,2,3-Trichloropropane	0.547	0.0114	0.5691	0	96.1	50.5	131	0.5885	7.35	30	
1,2,4-Trichlorobenzene	0.593	0.0285	0.5691	0	104	50.8	130	0.5905	0.423	30	
sec-Butylbenzene	0.540	0.0114	0.5691	0	94.9	52.6	141	0.5266	2.55	30	
4-Isopropyltoluene	0.543	0.0114	0.5691	0	95.4	52.9	134	0.5342	1.61	30	
1,3-Dichlorobenzene	0.562	0.0114	0.5691	0	98.8	52.6	131	0.5647	0.412	30	
1,4-Dichlorobenzene	0.559	0.0114	0.5691	0	98.2	52.9	129	0.5610	0.383	30	
n-Butylbenzene	0.536	0.0114	0.5691	0	94.1	52.6	130	0.5200	2.98	30	
1,2-Dichlorobenzene	0.563	0.0114	0.5691	0	99.0	55.8	129	0.5611	0.388	30	
1,2-Dibromo-3-chloropropane	0.487	0.285	0.5691	0	85.6	40.5	131	0.5118	4.95	30	
1,2,4-Trimethylbenzene	0.530	0.0114	0.5691	0	93.1	50.6	137	0.5220	1.49	30	
Hexachlorobutadiene	0.509	0.0569	0.5691	0	89.5	40.6	158	0.4869	4.51	30	
Naphthalene	0.666	0.0171	0.5691	0	117	52.3	124	0.6551	1.61	30	
1,2,3-Trichlorobenzene	0.626	0.0114	0.5691	0	110	54.4	124	0.6204	0.868	30	
Surr: Dibromofluoromethane	0.696		0.7114		97.8	56.5	129		0		
Surr: Toluene-d8	0.703		0.7114		98.8	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	0.762		0.7114		107	63.1	141		0		

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705255-011BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/26/2017</b>	SeqNo: <b>698988</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0633						0		30	
Chloromethane	ND	0.0633						0		30	
Vinyl chloride	ND	0.00211						0		30	
Bromomethane	ND	0.0949						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0527						0		30	
Chloroethane	ND	0.0633						0		30	
1,1-Dichloroethene	ND	0.0527						0		30	
Methylene chloride	ND	0.0211						0		30	
trans-1,2-Dichloroethene	ND	0.0211						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0527						0		30	
1,1-Dichloroethane	ND	0.0211						0		30	
2,2-Dichloropropane	ND	0.0527						0		30	
cis-1,2-Dichloroethene	ND	0.0211						0		30	
Chloroform	ND	0.0211						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0211						0		30	
1,1-Dichloropropene	ND	0.0211						0		30	
Carbon tetrachloride	ND	0.0211						0		30	
1,2-Dichloroethane (EDC)	ND	0.0316						0		30	
Benzene	ND	0.0211						0		30	
Trichloroethene (TCE)	ND	0.0211						0		30	
1,2-Dichloropropane	ND	0.0211						0		30	
Bromodichloromethane	ND	0.0211						0		30	
Dibromomethane	ND	0.0422						0		30	
cis-1,3-Dichloropropene	ND	0.0211						0		30	
Toluene	ND	0.0211						0		30	
trans-1,3-Dichloropropylene	ND	0.0316						0		30	
1,1,2-Trichloroethane	ND	0.0316						0		30	
1,3-Dichloropropane	ND	0.0527						0		30	
Tetrachloroethene (PCE)	ND	0.0211						0		30	
Dibromochloromethane	ND	0.0316						0		30	
1,2-Dibromoethane (EDB)	ND	0.00527						0		30	

**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1705255-011BDUP</b>	SampType: <b>DUP</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>5/24/2017</b>	RunNo: <b>36398</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>17161</b>		Analysis Date: <b>5/26/2017</b>	SeqNo: <b>698988</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	ND	0.0211						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0316						0		30	
Ethylbenzene	ND	0.0316						0		30	
m,p-Xylene	ND	0.0211						0		30	
o-Xylene	ND	0.0211						0		30	
Styrene	ND	0.0211						0		30	
Isopropylbenzene	ND	0.0844						0		30	
Bromoform	ND	0.0211						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0211						0		30	
n-Propylbenzene	ND	0.0211						0		30	
Bromobenzene	ND	0.0316						0		30	
1,3,5-Trimethylbenzene	ND	0.0211						0		30	
2-Chlorotoluene	ND	0.0211						0		30	
4-Chlorotoluene	ND	0.0211						0		30	
tert-Butylbenzene	ND	0.0211						0		30	
1,2,3-Trichloropropane	ND	0.0211						0		30	
1,2,4-Trichlorobenzene	ND	0.0527						0		30	
sec-Butylbenzene	ND	0.0211						0		30	
4-Isopropyltoluene	ND	0.0211						0		30	
1,3-Dichlorobenzene	ND	0.0211						0		30	
1,4-Dichlorobenzene	ND	0.0211						0		30	
n-Butylbenzene	ND	0.0211						0		30	
1,2-Dichlorobenzene	ND	0.0211						0		30	
1,2-Dibromo-3-chloropropane	ND	0.527						0		30	
1,2,4-Trimethylbenzene	ND	0.0211						0		30	
Hexachlorobutadiene	ND	0.105						0		30	
Naphthalene	ND	0.0316						0		30	
1,2,3-Trichlorobenzene	ND	0.0211						0		30	
Surr: Dibromofluoromethane	1.17		1.319		88.7	56.5	129		0		
Surr: Toluene-d8	1.25		1.319		94.9	64.5	151		0		
Surr: 1-Bromo-4-fluorobenzene	1.22		1.319		92.4	63.1	141		0		



**Work Order:** 1705249  
**CLIENT:** Shannon & Wilson  
**Project:** 615 Dexter Ave N Phase II

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	<b>1705255-011BDUP</b>	SampType:	<b>DUP</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>5/24/2017</b>	RunNo:	<b>36398</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>17161</b>			Analysis Date:	<b>5/26/2017</b>	SeqNo:	<b>698988</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Client Name: <b>SW</b>	Work Order Number: <b>1705249</b>
Logged by: <b>Chelsea Ward</b>	Date Received: <b>5/19/2017 1:08:00 PM</b>

### Chain of Custody

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

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C\* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	4.9
Sample	2.3

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



3600 Fremont Ave N.  
Seattle, WA 98103  
Tel: 206-352-3790  
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 5/19/17 Page: 1 of 1  
 Project Name: 615 Dexter Ave N Phase II  
 Project No: 21417-205  
 Collected by: BON  
 Location: 615 Dexter Ave N  
 Report To (PM): ACT, BON  
 PM Email: ACT@shanwil.com, BON@shanwil.com

Laboratory Project No (internal): 1705249  
 Special Remarks:  
 Sample Disposal:  Return to client  Disposal by lab (after 30 days)

Client: Shannon & Wilson  
 Address: 400 N 34th St. Suite 100  
 City, State, Zip: Seattle, WA  
 Telephone: 206-695-6600  
 Fax:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytical Parameters													Comments				
				VOCS (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (Dx)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6070 / 200.8)	Total (T)   Dissolved (D)	Anions (IC)***	EDB (8011)					
1 21417-GP5:1	5/19	830	S	X		X	X	X													
2 21417-GP5:14	5/19	950	S	X		X	X														
3 21417-GP6:18	5/19	1030	S	X		X	X														
4 21417-GP7:2	5/19	1050	S	X		X	X														
5 21417-GP7:13	5/19	1135	S	X		X	X														
6																					
7																					
8																					
9																					
10																					

\*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water  
 \*\*Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn  
 \*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished x Date/Time 5/19/17 1308 Received x Date/Time 5/19/17 1308

Turn-around Time:  
 Standard  
 3 Day  
 2 Day  
 Next Day  
 Same Day (specify)

Page 48 of 49



FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
e-mail: fbi@isomedia.com

February 11, 2013

Chuck Cacek, Project Manager  
SoundEarth Strategies  
2811 Fairview Ave. East, Suite 2000  
Seattle, WA 98102

Dear Mr. Cacek:

Included is the amended report from the testing of material submitted on February 4, 2013 from the SOU\_0797\_20130204, F&BI 302031 project. Per your request, the sample IDs have been amended to B117.

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: Brian Dixon  
SOU0208R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
e-mail: fbi@isomedia.com

February 8, 2013

Chuck Cacek, Project Manager  
SoundEarth Strategies  
2811 Fairview Ave. East, Suite 2000  
Seattle, WA 98102

Dear Mr. Cacek:

Included are the results from the testing of material submitted on February 4, 2013 from the SOU\_0797\_20130204, F&BI 302031 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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: Brian Dixon  
SOU0208R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 4, 2013 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU\_0797\_20130204, F&BI 302031 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SoundEarth Strategies</u>
302031 -01	B117-10
302031 -02	B117-15
302031 -03	B117-20
302031 -04	B117-25
302031 -05	B117-30
302031 -06	B117-35
302031 -07	B117-40
302031 -08	B117-45
302031 -09	B117-50
302031 -10	B117-55

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B117-10	Client:	SoundEarth Strategies
Date Received:	02/04/13	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	302031-01
Date Analyzed:	02/05/13	Data File:	020511.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B117-20	Client:	SoundEarth Strategies
Date Received:	02/04/13	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	302031-03
Date Analyzed:	02/05/13	Data File:	020512.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B117-30	Client:	SoundEarth Strategies
Date Received:	02/04/13	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	302031-05
Date Analyzed:	02/05/13	Data File:	020513.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B117-40	Client:	SoundEarth Strategies
Date Received:	02/04/13	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	302031-07
Date Analyzed:	02/05/13	Data File:	020514.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B117-50	Client:	SoundEarth Strategies
Date Received:	02/04/13	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	302031-09
Date Analyzed:	02/05/13	Data File:	020515.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	Not Applicable	Project:	SOU_0797_20130204, F&BI 302031
Date Extracted:	02/05/13	Lab ID:	03-0126 mb2
Date Analyzed:	02/05/13	Data File:	020510.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.03
Tetrachloroethene	<0.025

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/08/13

Date Received: 02/04/13

Project: SOU\_0797\_20130204, F&BI 302031

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 301327-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	60	10-91
Chloroethane	mg/kg (ppm)	2.5	<0.5	64	10-101
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	74	11-103
Methylene chloride	mg/kg (ppm)	2.5	1.6	67 b	14-128
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	77	13-112
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	83	23-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	25-120
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	84	22-124
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	79	27-112
Trichloroethene	mg/kg (ppm)	2.5	<0.03	84	30-112
Tetrachloroethene	mg/kg (ppm)	2.5	<0.03	80	27-110

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	84	85	42-107	1
Chloroethane	mg/kg (ppm)	2.5	82	85	47-115	4
1,1-Dichloroethene	mg/kg (ppm)	2.5	95	95	65-110	0
Methylene chloride	mg/kg (ppm)	2.5	99	97	62-119	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	92	92	71-113	0
1,1-Dichloroethane	mg/kg (ppm)	2.5	97	96	76-109	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	97	97	77-110	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	98	93	80-109	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	97	95	72-116	2
Trichloroethene	mg/kg (ppm)	2.5	98	97	72-107	1
Tetrachloroethene	mg/kg (ppm)	2.5	99	99	77-110	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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

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

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

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is 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.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

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.

302031

SAMPLE CHAIN OF CUSTODY

NE 02/04/13

VS2/012

Send Report To Chuck Cacek  
 Company SundEarth Strategies  
 Address 2511 Fairview Ave E Suite 2000  
 City, State, ZIP Seattle, WA 98108  
 Phone # 206.306.1900 Fax # 206.306.1907

SAMPLERS (signature) [Signature]  
 PROJECT NAME/NO. 700 Dexter / 0797 PO #  
 REMARKS  
 GEMS Y / N

Page 1 of 1  
 TURNAROUND TIME  
 Standard (2 Weeks)  
 RUSH 48h TAT per CC  
 Rush charges authorized by: [Signature]  
 SAMPLE DISPOSAL  
 Dispose after 30 days  
 Return samples  
 Will call with instructions

Sample ID <i>per CC 2/8/13 ac</i>	Sample Location	Sample Depth	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED							Notes			
								NW/TH/DOX	NW/TH/DOX	BTEX by 8021B	VOCs by 8250	SVOCs by 8270	RCRA-8 Metals	Cu/Cs		X-per CC 2/4/13 #1		
B118-10	B118	10	01E	2-7-13	1055	Sol	5										Hold	
B118-15	B118	15	02		1100	Sol	5											Hold
B118-20	B118	20	03		1110	Sol	5											Hold
B118-25	B118	25	04		1115	Sol	5											Hold
B118-30	B118	30	05		1125	Sol	5											Hold
B118-35	B118	35	06		1130	Sol	5											Hold
B118-40	B118	40	07		1150	Sol	5											Hold
B118-45	B118	45	08		1150	Sol	5											Hold
B118-50	B118	50	09		1200	Sol	5											Hold
B118-55	B118	55	10		1205	Sol	5											Hold

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>[Signature]</u>	Robert A. Hrusberger	SES	2-7-13	12:42
<u>[Signature]</u>	HONG NGUYEN	FBI	2/4/13	12:45
Received by:				

Samples received at 5 °C

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
e-mail: fbi@isomedia.com

February 12, 2013

Chuck Cacek, Project Manager  
SoundEarth Strategies  
2811 Fairview Ave. East, Suite 2000  
Seattle, WA 98102

Dear Mr. Cacek:

Included are the results from the testing of material submitted on February 8, 2013 from the SOU\_0797-001-02\_20130208, F&BI 302101 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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: Brian Dixon  
SOU0212R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 8, 2013 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU\_0797-001-02\_20130208, F&BI 302101 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID  
302101 -01

SoundEarth Strategies  
MW117-20130208

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW117-20130208	Client:	SoundEarth Strategies
Date Received:	02/08/13	Project:	SOU_0797-001-02_20130208, F&BI 302101
Date Extracted:	02/08/13	Lab ID:	302101-01
Date Analyzed:	02/08/13	Data File:	020811.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	91	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
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)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	Not Applicable	Project:	SOU_0797-001-02_20130208, F&BI 302101
Date Extracted:	02/08/13	Lab ID:	03-0131 MB
Date Analyzed:	02/08/13	Data File:	020810.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	91	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
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)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/12/13

Date Received: 02/08/13

Project: SOU\_0797-001-02\_20130208, F&BI 302101

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

Laboratory Code: 302101-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	88	36-166
Chloroethane	ug/L (ppb)	50	<1	87	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	91	60-136
Methylene chloride	ug/L (ppb)	50	<5	79	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	88	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	86	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	87	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	85	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	90	60-146
Trichloroethene	ug/L (ppb)	50	<1	82	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	89	73-129

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)	50	92	93	50-154	1
Chloroethane	ug/L (ppb)	50	90	92	58-146	2
1,1-Dichloroethene	ug/L (ppb)	50	92	94	67-136	2
Methylene chloride	ug/L (ppb)	50	81	82	39-148	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	89	90	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	88	89	79-121	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	89	90	80-123	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	87	87	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	93	94	83-130	1
Trichloroethene	ug/L (ppb)	50	83	84	80-120	1
Tetrachloroethene	ug/L (ppb)	50	91	93	76-121	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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

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

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

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is 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.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

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.

302101

SAMPLE CHAIN OF CUSTODY

ME 2/8/13 VI/AI3

Send Report To Chuck Creek  
 Company SoundEarth Strategies Inc  
 Address 2811 Fairview Ave E #2000  
 City, State, ZIP Seattle WA 98107  
 Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS (signature) *[Signature]*

PROJECT NAME/NO. 6797-001-02 PO # ALS Co Property

REMARKS

Page # 1 of 1

TURNAROUND TIME  
 Standard (2 Weeks)  
 RUSH 48 hr TAT  
 Rush charges authorized by:

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

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED							Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	HVOCs by 8260 S <sub>4</sub>	
<sup>117</sup> MWHB-20130208	O1A-E	2/8/13	1054	w	5							X	
		<i>[Signature]</i> 2/8/13											

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: <i>[Signature]</i>	Andree Litlegren	SES	2/8/13	1140
Received by: <i>[Signature]</i>	James Bruya	F&B	2/8/13	1140
Relinquished by:				
Received by:				



## PES Environmental, Inc.- WA

Sample Delivery Group: L1149387  
Samples Received: 10/12/2019  
Project Number: 1413.001.02.501E  
Description: American Linen

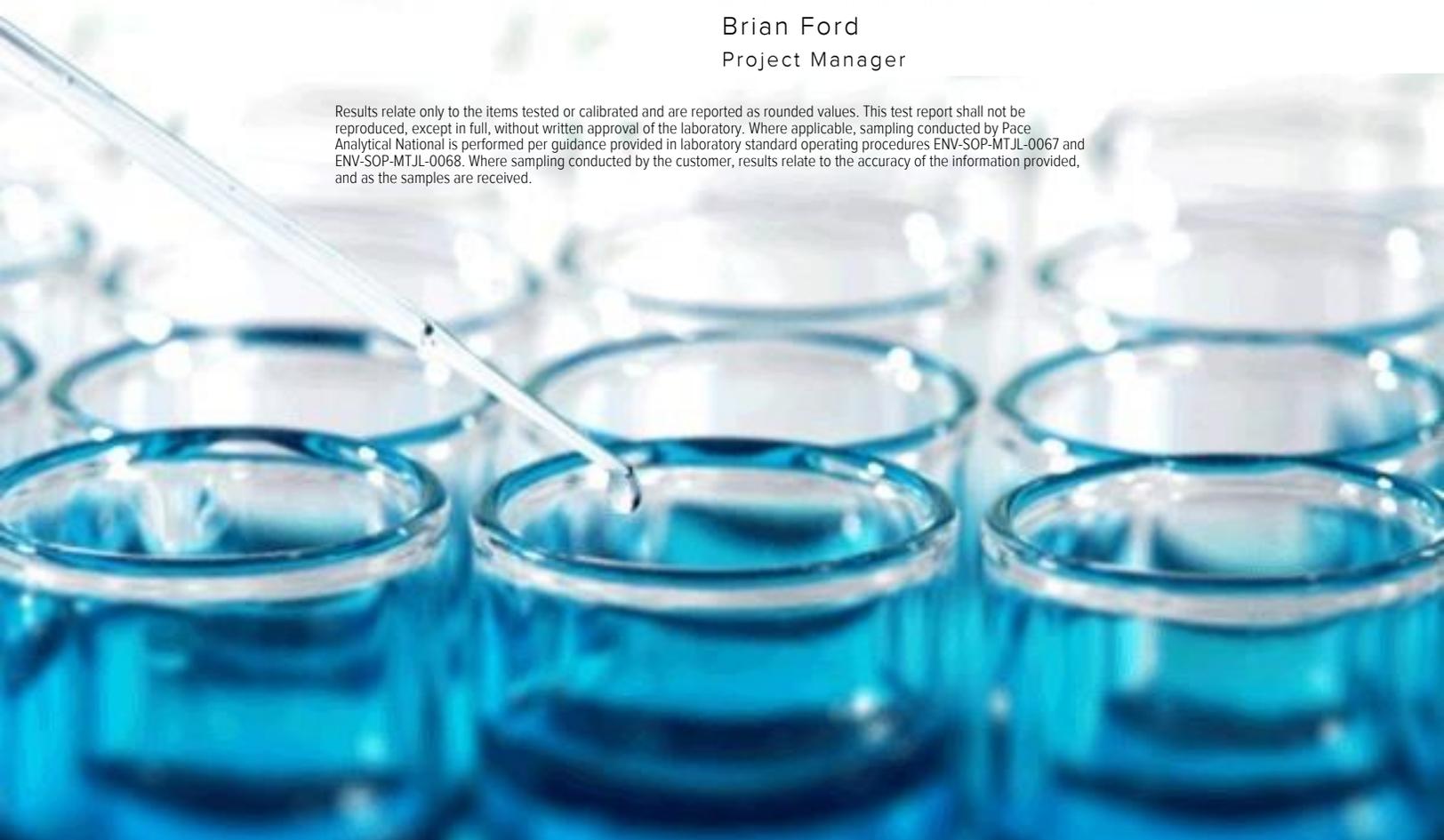
Report To: Brian O'Neal/Bill Haldeman  
1215 Fourth Ave., Suite 1350  
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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MW124-101119 L1149387-04	12	
MW-307-101119 L1149387-05	15	
MW-214-101119 L1149387-06	18	
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# SAMPLE SUMMARY



## MW-916-101119 L1149387-01 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 08:00      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 16:55	10/19/19 16:55	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:01	10/12/19 19:01	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 19:57	10/16/19 19:57	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	10	10/16/19 11:54	10/16/19 11:54	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 08:47	10/21/19 08:47	BMB	Mt. Juliet, TN

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## SMW-3-101119 L1149387-02 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 09:45      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:06	10/21/19 09:06	BMB	Mt. Juliet, TN

## MW128-101119 L1149387-03 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 10:45      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:05	10/19/19 17:05	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:18	10/12/19 19:18	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:15	10/16/19 20:15	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363429	10	10/16/19 14:53	10/16/19 14:53	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 12:05	10/16/19 12:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:26	10/21/19 09:26	BMB	Mt. Juliet, TN

## MW124-101119 L1149387-04 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 11:11      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:13	10/19/19 17:13	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:34	10/12/19 19:34	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:32	10/16/19 20:32	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:01	10/16/19 16:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:29	10/16/19 13:29	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 09:46	10/21/19 09:46	BMB	Mt. Juliet, TN

## MW-307-101119 L1149387-05 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 11:35      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:21	10/19/19 17:21	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 19:51	10/12/19 19:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 20:50	10/16/19 20:50	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:27	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:25	10/16/19 16:25	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:00	10/16/19 13:00	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:05	10/21/19 10:05	BMB	Mt. Juliet, TN

# SAMPLE SUMMARY



## MW-214-101119 L1149387-06 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 12:15      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:25	10/21/19 10:25	BMB	Mt. Juliet, TN

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-312-101119 L1149387-07 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 13:50      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:30	10/19/19 17:30	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 20:07	10/12/19 20:07	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 21:13	10/16/19 21:13	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:02	10/16/19 13:02	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 10:45	10/21/19 10:45	BMB	Mt. Juliet, TN

## MW-308-101119 L1149387-08 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 14:55      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	2.5	10/19/19 17:37	10/19/19 17:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 20:23	10/12/19 20:23	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 21:34	10/16/19 21:34	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:34	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:05	10/16/19 13:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:04	10/21/19 11:04	BMB	Mt. Juliet, TN

## EQ-101119 L1149387-09 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 14:40      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 17:53	10/19/19 17:53	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1361957	1	10/12/19 21:29	10/12/19 21:29	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/16/19 23:27	10/16/19 23:27	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364591	1	10/18/19 10:15	10/18/19 13:37	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 16:49	10/16/19 16:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:07	10/16/19 13:07	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:24	10/21/19 11:24	BMB	Mt. Juliet, TN

## TRIP-101119 L1149387-10 GW

Collected by  
KZ/BH/HC      Collected date/time  
10/11/19 16:00      Received date/time  
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1363461	1	10/16/19 13:22	10/16/19 13:22	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 08:27	10/21/19 08:27	BMB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford  
Project Manager

### Sample Delivery Group (SDG) Narrative

VOC pH outside of method requirement.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
<a href="#">L1149387-04</a>	<a href="#">MW124-101119</a>	8260C
<a href="#">L1149387-05</a>	<a href="#">MW-307-101119</a>	8260C
<a href="#">L1149387-07</a>	<a href="#">MW-312-101119</a>	8260C

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	828000		6780	50000	2.5	10/19/2019 16:55	<a href="#">WG1365100</a>

Sample Narrative:

L1149387-01 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21400		51.9	1000	1	10/12/2019 19:01	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 19:01	<a href="#">WG1361957</a>
Sulfate	14000		77.4	5000	1	10/12/2019 19:01	<a href="#">WG1361957</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4420		102	1000	1	10/16/2019 19:57	<a href="#">WG1364227</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	8740		15.0	100	1	10/18/2019 13:17	<a href="#">WG1364591</a>
Manganese	218		0.250	5.00	1	10/18/2019 13:17	<a href="#">WG1364591</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	10100		2.87	6.78	10	10/16/2019 11:54	<a href="#">WG1363432</a>
Ethane	U		2.96	12.9	10	10/16/2019 11:54	<a href="#">WG1363432</a>
Ethene	U		4.22	12.7	10	10/16/2019 11:54	<a href="#">WG1363432</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<a href="#">JO</a>	1.05	25.0	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Acrylonitrile	U	<a href="#">JO</a>	0.873	5.00	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Benzene	1.34		0.0896	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Bromomethane	U	<a href="#">JO</a>	0.157	2.50	1	10/21/2019 08:47	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 08:47	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 08:47	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 08:00

L1149387

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 08:47	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 08:47	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 08:47	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 08:47	WG1366365
cis-1,2-Dichloroethene	0.841		0.0933	0.500	1	10/21/2019 08:47	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 08:47	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 08:47	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 08:47	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 08:47	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 08:47	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 08:47	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 08:47	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 08:47	WG1366365
Di-isopropyl ether	0.137	J	0.0924	0.500	1	10/21/2019 08:47	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 08:47	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 08:47	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 08:47	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 08:47	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 08:47	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 08:47	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 08:47	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 08:47	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 08:47	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 08:47	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 08:47	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 08:47	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 08:47	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 08:47	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 08:47	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 08:47	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 08:47	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 08:47	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 08:47	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 08:47	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 08:47	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 08:47	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 08:47	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 08:47	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 08:47	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 08:47	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 08:47	WG1366365
Vinyl chloride	24.1		0.118	0.500	1	10/21/2019 08:47	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 08:47	WG1366365
(S) Toluene-d8	95.6			80.0-120		10/21/2019 08:47	WG1366365
(S) 4-Bromofluorobenzene	88.4			77.0-126		10/21/2019 08:47	WG1366365
(S) 1,2-Dichloroethane-d4	83.8			70.0-130		10/21/2019 08:47	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 09:06	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
n-Hexane	U		0.305	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Styrene	U		0.117	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Toluene	U		0.412	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:06	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:06	<a href="#">WG1366365</a>
(S) Toluene-d8	98.3			80.0-120		10/21/2019 09:06	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	91.1			77.0-126		10/21/2019 09:06	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	82.2			70.0-130		10/21/2019 09:06	<a href="#">WG1366365</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



## Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	746000		6780	50000	2.5	10/19/2019 17:05	<a href="#">WG1365100</a>

## Sample Narrative:

L1149387-03 WG1365100: Endpoint pH 4.5

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22600		51.9	1000	1	10/12/2019 19:18	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 19:18	<a href="#">WG1361957</a>
Sulfate	20900		77.4	5000	1	10/12/2019 19:18	<a href="#">WG1361957</a>

## Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4200		102	1000	1	10/16/2019 20:15	<a href="#">WG1364227</a>

## Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7950		15.0	100	1	10/18/2019 13:20	<a href="#">WG1364591</a>
Manganese	207		0.250	5.00	1	10/18/2019 13:20	<a href="#">WG1364591</a>

## Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	13100		2.87	6.78	10	10/16/2019 14:53	<a href="#">WG1363429</a>
Ethane	8.49		0.296	1.29	1	10/16/2019 12:05	<a href="#">WG1363432</a>
Ethene	23.5		0.422	1.27	1	10/16/2019 12:05	<a href="#">WG1363432</a>

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Acrylonitrile	U		0.873	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Benzene	0.984		0.0896	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Bromomethane	U		0.157	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 09:26	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 10:45

L1149387

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
cis-1,2-Dichloroethene	0.619		0.0933	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
n-Hexane	U		0.305	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Styrene	U		0.117	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Toluene	U		0.412	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Vinyl chloride	13.3		0.118	0.500	1	10/21/2019 09:26	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:26	<a href="#">WG1366365</a>
(S) Toluene-d8	95.1			80.0-120		10/21/2019 09:26	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	90.7			77.0-126		10/21/2019 09:26	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	81.2			70.0-130		10/21/2019 09:26	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	152000		2710	20000	1	10/19/2019 17:13	<a href="#">WG1365100</a>

Sample Narrative:

L1149387-04 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6260		51.9	1000	1	10/12/2019 19:34	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 19:34	<a href="#">WG1361957</a>
Sulfate	5920	<b>B</b>	77.4	5000	1	10/12/2019 19:34	<a href="#">WG1361957</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	<b>B</b>	102	1000	1	10/16/2019 20:32	<a href="#">WG1364227</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2240		15.0	100	1	10/18/2019 13:24	<a href="#">WG1364591</a>
Manganese	301		0.250	5.00	1	10/18/2019 13:24	<a href="#">WG1364591</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:01	<a href="#">WG1363461</a>
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:01	<a href="#">WG1363461</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12.3		0.287	0.678	1	10/16/2019 13:29	<a href="#">WG1363432</a>
Ethane	U		0.296	1.29	1	10/16/2019 13:29	<a href="#">WG1363432</a>
Ethene	U		0.422	1.27	1	10/16/2019 13:29	<a href="#">WG1363432</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	9.24	<b>J JO</b>	1.05	25.0	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Acrylonitrile	U	<b>JO</b>	0.873	5.00	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Bromomethane	U	<b>JO</b>	0.157	2.50	1	10/21/2019 09:46	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 09:46	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 09:46	WG1366365
Chloroform	1.06		0.0860	0.500	1	10/21/2019 09:46	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 09:46	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 09:46	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 09:46	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 09:46	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 09:46	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 09:46	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 09:46	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 09:46	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 09:46	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 09:46	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 09:46	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 09:46	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 09:46	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 09:46	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 09:46	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 09:46	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 09:46	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 09:46	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 09:46	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 09:46	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 09:46	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 09:46	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 09:46	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 09:46	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 09:46	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 09:46	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 09:46	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 09:46	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 09:46	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 09:46	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 09:46	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 09:46	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 09:46	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 09:46	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 09:46	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 09:46	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 09:46	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 09:46	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 09:46	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 09:46	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 09:46	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 09:46	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Vinyl chloride	U		0.118	0.500	1	10/21/2019 09:46	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 09:46	<a href="#">WG1366365</a>
<i>(S) Toluene-d8</i>	97.9			80.0-120		10/21/2019 09:46	<a href="#">WG1366365</a>
<i>(S) 4-Bromofluorobenzene</i>	91.6			77.0-126		10/21/2019 09:46	<a href="#">WG1366365</a>
<i>(S) 1,2-Dichloroethane-d4</i>	84.9			70.0-130		10/21/2019 09:46	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	276000		2710	20000	1	10/19/2019 17:21	<a href="#">WG1365100</a>

Sample Narrative:

L1149387-05 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14600		51.9	1000	1	10/12/2019 19:51	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 19:51	<a href="#">WG1361957</a>
Sulfate	69100		77.4	5000	1	10/12/2019 19:51	<a href="#">WG1361957</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4120	<u>B</u>	102	1000	1	10/16/2019 20:50	<a href="#">WG1364227</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1030		15.0	100	1	10/18/2019 13:27	<a href="#">WG1364591</a>
Manganese	149		0.250	5.00	1	10/18/2019 13:27	<a href="#">WG1364591</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:25	<a href="#">WG1363461</a>
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:25	<a href="#">WG1363461</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	26.6		0.287	0.678	1	10/16/2019 13:00	<a href="#">WG1363432</a>
Ethane	13.0		0.296	1.29	1	10/16/2019 13:00	<a href="#">WG1363432</a>
Ethene	7.90		0.422	1.27	1	10/16/2019 13:00	<a href="#">WG1363432</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.17	<u>J JO</u>	1.05	25.0	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:05	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:05	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 10:05	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 10:05	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 10:05	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:05	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:05	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:05	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:05	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:05	WG1366365
cis-1,2-Dichloroethene	0.935		0.0933	0.500	1	10/21/2019 10:05	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:05	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:05	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:05	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:05	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:05	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:05	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 10:05	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:05	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:05	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:05	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:05	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 10:05	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:05	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 10:05	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:05	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:05	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 10:05	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:05	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 10:05	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:05	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 10:05	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:05	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:05	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:05	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:05	WG1366365
Toluene	1.05		0.412	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:05	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:05	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:05	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:05	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:05	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:05	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:05	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:05	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:05	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:05	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Vinyl chloride	0.289	<u>J</u>	0.118	0.500	1	10/21/2019 10:05	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:05	<a href="#">WG1366365</a>
<i>(S) Toluene-d8</i>	96.6			80.0-120		10/21/2019 10:05	<a href="#">WG1366365</a>
<i>(S) 4-Bromofluorobenzene</i>	89.9			77.0-126		10/21/2019 10:05	<a href="#">WG1366365</a>
<i>(S) 1,2-Dichloroethane-d4</i>	83.1			70.0-130		10/21/2019 10:05	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Benzene	1.95		0.0896	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
sec-Butylbenzene	0.384	<u>J</u>	0.134	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 10:25	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Ethylbenzene	0.355	<u>J</u>	0.158	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
n-Hexane	U		0.305	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Isopropylbenzene	1.11		0.126	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Naphthalene	4.32	<u>JO</u>	0.174	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
n-Propylbenzene	0.521		0.162	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Styrene	U		0.117	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Toluene	U		0.412	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2,4-Trimethylbenzene	0.174	<u>J</u>	0.123	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,2,3-Trimethylbenzene	2.69		0.0739	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:25	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:25	<a href="#">WG1366365</a>
(S) Toluene-d8	94.1			80.0-120		10/21/2019 10:25	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	91.6			77.0-126		10/21/2019 10:25	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	84.4			70.0-130		10/21/2019 10:25	<a href="#">WG1366365</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	1220000		6780	50000	2.5	10/19/2019 17:30	<a href="#">WG1365100</a>

Sample Narrative:

L1149387-07 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10900		51.9	1000	1	10/12/2019 20:07	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 20:07	<a href="#">WG1361957</a>
Sulfate	5710	<u>B</u>	77.4	5000	1	10/12/2019 20:07	<a href="#">WG1361957</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	14700		102	1000	1	10/16/2019 21:13	<a href="#">WG1364227</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5180		15.0	100	1	10/18/2019 13:30	<a href="#">WG1364591</a>
Manganese	845		0.250	5.00	1	10/18/2019 13:30	<a href="#">WG1364591</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	768		0.287	0.678	1	10/16/2019 13:02	<a href="#">WG1363432</a>
Ethane	U		0.296	1.29	1	10/16/2019 13:02	<a href="#">WG1363432</a>
Ethene	U		0.422	1.27	1	10/16/2019 13:02	<a href="#">WG1363432</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.53	<u>J JO</u>	1.05	25.0	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 10:45	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 10:45	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 10:45	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 13:50

L1149387

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 10:45	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 10:45	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 10:45	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 10:45	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 10:45	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 10:45	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 10:45	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 10:45	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 10:45	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 10:45	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 10:45	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 10:45	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 10:45	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 10:45	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 10:45	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 10:45	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 10:45	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 10:45	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 10:45	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 10:45	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 10:45	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 10:45	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 10:45	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 10:45	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 10:45	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 10:45	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 10:45	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 10:45	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 10:45	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 10:45	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 10:45	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 10:45	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 10:45	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 10:45	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 10:45	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 10:45	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 10:45	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 10:45	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 10:45	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 10:45	WG1366365
Vinyl acetate	U	JO	0.645	5.00	1	10/21/2019 10:45	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/21/2019 10:45	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 10:45	WG1366365
(S) Toluene-d8	98.6			80.0-120		10/21/2019 10:45	WG1366365
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/21/2019 10:45	WG1366365
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/21/2019 10:45	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	901000		6780	50000	2.5	10/19/2019 17:37	<a href="#">WG1365100</a>

Sample Narrative:

L1149387-08 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15400		51.9	1000	1	10/12/2019 20:23	<a href="#">WG1361957</a>
Nitrate	U		22.7	100	1	10/12/2019 20:23	<a href="#">WG1361957</a>
Sulfate	95400		77.4	5000	1	10/12/2019 20:23	<a href="#">WG1361957</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6970		102	1000	1	10/16/2019 21:34	<a href="#">WG1364227</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	16900		15.0	100	1	10/18/2019 13:34	<a href="#">WG1364591</a>
Manganese	2950		0.250	5.00	1	10/18/2019 13:34	<a href="#">WG1364591</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2070		0.287	0.678	1	10/16/2019 13:05	<a href="#">WG1363432</a>
Ethane	19.7		0.296	1.29	1	10/16/2019 13:05	<a href="#">WG1363432</a>
Ethene	U		0.422	1.27	1	10/16/2019 13:05	<a href="#">WG1363432</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.27	<a href="#">J JO</a>	1.05	25.0	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Acrylonitrile	U	<a href="#">JO</a>	0.873	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Benzene	12.5		0.0896	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Bromomethane	U	<a href="#">JO</a>	0.157	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 11:04	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 14:55

L1149387

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2-Dichloroethane	0.133	<u>U</u>	0.108	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
cis-1,2-Dichloroethene	38.9		0.0933	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
trans-1,2-Dichloroethene	0.492	<u>U</u>	0.152	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
n-Hexane	U		0.305	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Styrene	U		0.117	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Toluene	4.38		0.412	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Vinyl chloride	20.3		0.118	0.500	1	10/21/2019 11:04	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:04	<a href="#">WG1366365</a>
(S) Toluene-d8	95.8			80.0-120		10/21/2019 11:04	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	91.9			77.0-126		10/21/2019 11:04	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	85.9			70.0-130		10/21/2019 11:04	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



## Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	5750	<u>B J</u>	2710	20000	1	10/19/2019 17:53	<a href="#">WG1365100</a>

## Sample Narrative:

L1149387-09 WG1365100: Endpoint pH 4.5

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	222	<u>B J P1</u>	51.9	1000	1	10/12/2019 21:29	<a href="#">WG1361957</a>
Nitrate	U	<u>P1</u>	22.7	100	1	10/12/2019 21:29	<a href="#">WG1361957</a>
Sulfate	U		77.4	5000	1	10/12/2019 21:29	<a href="#">WG1361957</a>

## Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	279	<u>B J</u>	102	1000	1	10/16/2019 23:27	<a href="#">WG1364227</a>

## Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	32.9	<u>J</u>	15.0	100	1	10/18/2019 13:37	<a href="#">WG1364591</a>
Manganese	2.37	<u>B J</u>	0.250	5.00	1	10/18/2019 13:37	<a href="#">WG1364591</a>

## Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 16:49	<a href="#">WG1363461</a>
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/16/2019 16:49	<a href="#">WG1363461</a>

## Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	24.2		0.287	0.678	1	10/16/2019 13:07	<a href="#">WG1363432</a>
Ethane	U		0.296	1.29	1	10/16/2019 13:07	<a href="#">WG1363432</a>
Ethene	U		0.422	1.27	1	10/16/2019 13:07	<a href="#">WG1363432</a>

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 11:24	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>





Collected date/time: 10/11/19 14:40

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## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:24	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:24	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:24	WG1366365
Chloroform	0.200	J	0.0860	0.500	1	10/21/2019 11:24	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:24	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:24	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:24	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:24	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:24	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:24	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:24	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:24	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:24	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:24	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 11:24	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:24	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:24	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:24	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:24	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:24	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:24	WG1366365
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/21/2019 11:24	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:24	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:24	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:24	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:24	WG1366365
2-Hexanone	U	JO	0.757	5.00	1	10/21/2019 11:24	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:24	WG1366365
Iodomethane	U	JO	0.377	10.0	1	10/21/2019 11:24	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:24	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:24	WG1366365
2-Butanone (MEK)	U	JO	1.28	5.00	1	10/21/2019 11:24	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:24	WG1366365
4-Methyl-2-pentanone (MIBK)	U	JO	0.823	5.00	1	10/21/2019 11:24	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:24	WG1366365
Naphthalene	U	JO	0.174	2.50	1	10/21/2019 11:24	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:24	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:24	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:24	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:24	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:24	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:24	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 11:24	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:24	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:24	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:24	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:24	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:24	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:24	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:24	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:24	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:24	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:24	WG1366365

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 14:40

L1149387

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Vinyl chloride	U		0.118	0.500	1	10/21/2019 11:24	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:24	<a href="#">WG1366365</a>
(S) Toluene-d8	98.4			80.0-120		10/21/2019 11:24	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	96.1			77.0-126		10/21/2019 11:24	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	82.6			70.0-130		10/21/2019 11:24	<a href="#">WG1366365</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/11/19 16:00

L1149387

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/16/2019 13:22	<a href="#">WG1363461</a>
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/16/2019 13:22	<a href="#">WG1363461</a>

1 Cp

2 Tc

3 Ss

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Acrylonitrile	U	<u>JO</u>	0.873	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Benzene	U		0.0896	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Bromobenzene	U		0.133	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Bromochloromethane	U		0.145	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Bromoform	U		0.186	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Carbon disulfide	U		0.101	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Chlorobenzene	U		0.140	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Chloroethane	U		0.141	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Chloroform	U		0.0860	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Chloromethane	U		0.153	1.25	1	10/21/2019 08:27	<a href="#">WG1366365</a>
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Dibromomethane	U		0.117	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Ethylbenzene	U		0.158	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
2-Hexanone	U	<u>JO</u>	0.757	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
n-Hexane	U		0.305	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
2-Butanone (MEK)	U	<u>JO</u>	1.28	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
4-Methyl-2-pentanone (MIBK)	U	<u>JO</u>	0.823	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Naphthalene	U	<u>JO</u>	0.174	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Styrene	U		0.117	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Toluene	U		0.412	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Trichloroethene	U		0.153	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Vinyl chloride	U		0.118	0.500	1	10/21/2019 08:27	<a href="#">WG1366365</a>
Xylenes, Total	U		0.316	1.50	1	10/21/2019 08:27	<a href="#">WG1366365</a>
(S) Toluene-d8	95.6			80.0-120		10/21/2019 08:27	<a href="#">WG1366365</a>
(S) 4-Bromofluorobenzene	92.7			77.0-126		10/21/2019 08:27	<a href="#">WG1366365</a>
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		10/21/2019 08:27	<a href="#">WG1366365</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462775-1 10/19/19 11:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4330	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1147285-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147285-01 10/19/19 12:25 • (DUP) R3462775-3 10/19/19 12:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	100000	93700	1	6.64		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1149401-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149401-01 10/19/19 18:01 • (DUP) R3462775-6 10/19/19 18:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1060000	1080000	1	1.63		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462775-5 10/19/19 13:33

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	98300	98.3	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3460615-1 10/12/19 12:19

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	79.3	↓	51.9	1000
Nitrate	U		22.7	100
Sulfate	1390	↓	77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L1147951-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147951-01 10/12/19 15:29 • (DUP) R3460615-3 10/12/19 15:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	5450	5430	1	0.384		15
Nitrate	396	379	1	4.44		15

L1149387-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-09 10/12/19 21:29 • (DUP) R3460615-6 10/12/19 21:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	222	109	1	68.4	J P1	15
Nitrate	U	41.0	1	200	J P1	15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3460615-2 10/12/19 12:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39300	98.2	80.0-120	
Nitrate	8000	7950	99.4	80.0-120	
Sulfate	40000	39900	99.8	80.0-120	

L1147951-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147951-02 10/12/19 16:01 • (MS) R3460615-4 10/12/19 16:17 • (MSD) R3460615-5 10/12/19 16:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	10700	60800	60700	100	100	1	80.0-120			0.0780	15
Nitrate	5000	416	5580	5580	103	103	1	80.0-120			0.147	15



L1147951-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147951-02 10/12/19 16:01 • (MS) R3460615-4 10/12/19 16:17 • (MSD) R3460615-5 10/12/19 16:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits
Sulfate	50000	16100	65100	65000	97.9	97.8	1	80.0-120			0.0477	15

L1149387-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149387-09 10/12/19 21:29 • (MS) R3460615-7 10/12/19 22:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	222	50000	99.5	1	80.0-120	
Nitrate	5000	U	5110	102	1	80.0-120	
Sulfate	50000	U	49700	99.5	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3462022-1 10/16/19 18:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	416	↓	102	1000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L1149387-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-08 10/16/19 21:34 • (DUP) R3462022-3 10/16/19 21:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	6970	7050	1	1.08		20

L1149591-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149591-06 10/17/19 08:46 • (DUP) R3462022-9 10/17/19 09:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC	489	421	1	15.1	↓	20

Laboratory Control Sample (LCS)

(LCS) R3462022-2 10/16/19 18:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC	75000	69000	92.0	85.0-115	

L1149591-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149591-04 10/17/19 00:20 • (MS) R3462022-4 10/17/19 00:42 • (MSD) R3462022-5 10/17/19 01:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	5870	53200	54900	94.7	98.1	1	80.0-120			3.11	20

L1149851-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-03 10/17/19 03:58 • (MS) R3462022-7 10/17/19 04:19 • (MSD) R3462022-8 10/17/19 04:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC	50000	2950	50000	49700	94.1	93.5	1	80.0-120			0.542	20



Method Blank (MB)

(MB) R3462523-1 10/18/19 12:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	1.01	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462523-2 10/18/19 12:31 • (LCSD) R3462523-3 10/18/19 12:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	5180	5330	104	107	80.0-120			2.87	20
Manganese	50.0	51.0	52.4	102	105	80.0-120			2.72	20

5 Sr

6 Qc

L1149342-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149342-02 10/18/19 12:38 • (MS) R3462523-5 10/18/19 12:44 • (MSD) R3462523-6 10/18/19 12:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	178	5450	5500	105	107	1	75.0-125			1.05	20
Manganese	50.0	44.5	95.2	95.9	101	103	1	75.0-125			0.734	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461647-3 10/16/19 12:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3461647-2 10/16/19 11:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5400	98.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			80.7	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461663-1 10/16/19 13:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Methane	U		0.287	0.678

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L1149196-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149196-01 10/16/19 13:57 • (DUP) R3461663-2 10/16/19 14:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	535	528	1	1.34		20

L1149342-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149342-08 10/16/19 14:38 • (DUP) R3461663-3 10/16/19 15:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Methane	384	387	1	0.623		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461663-4 10/16/19 15:39 • (LCSD) R3461663-5 10/16/19 15:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Methane	67.8	73.4	76.5	108	113	85.0-115			4.17	20



Method Blank (MB)

(MB) R3461591-1 10/16/19 10:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1149371-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149371-06 10/16/19 11:29 • (DUP) R3461591-2 10/16/19 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1130	1	4.95		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1149387-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-04 10/16/19 13:29 • (DUP) R3461591-3 10/16/19 13:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	12.3	12.9	1	4.67		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461591-4 10/16/19 13:35 • (LCSD) R3461591-5 10/16/19 13:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	75.3	76.3	111	112	85.0-115			1.34	20
Ethane	129	133	129	103	100	85.0-115			2.40	20
Ethene	127	138	135	109	106	85.0-115			2.67	20



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	98.9			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	83.6			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	88.2	70.6	19.0-160	
Acrylonitrile	125	94.1	75.3	55.0-149	
Benzene	25.0	22.6	90.4	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	22.1	88.4	75.0-120	
Bromochloromethane	25.0	24.0	96.0	76.0-122	
Bromoform	25.0	22.6	90.4	68.0-132	
Bromomethane	25.0	19.1	76.4	10.0-160	
n-Butylbenzene	25.0	26.5	106	73.0-125	
sec-Butylbenzene	25.0	25.4	102	75.0-125	
tert-Butylbenzene	25.0	24.3	97.2	76.0-124	
Carbon disulfide	25.0	22.4	89.6	61.0-128	
Carbon tetrachloride	25.0	21.3	85.2	68.0-126	
Chlorobenzene	25.0	24.3	97.2	80.0-121	
Chlorodibromomethane	25.0	23.7	94.8	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.0	88.0	73.0-120	
Chloromethane	25.0	20.1	80.4	41.0-142	
2-Chlorotoluene	25.0	24.2	96.8	76.0-123	
4-Chlorotoluene	25.0	23.4	93.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.3	81.2	58.0-134	
1,2-Dibromoethane	25.0	23.5	94.0	80.0-122	
Dibromomethane	25.0	22.3	89.2	80.0-120	
1,2-Dichlorobenzene	25.0	26.3	105	79.0-121	
1,3-Dichlorobenzene	25.0	26.7	107	79.0-120	
1,4-Dichlorobenzene	25.0	26.5	106	79.0-120	
Dichlorodifluoromethane	25.0	25.4	102	51.0-149	
1,1-Dichloroethane	25.0	21.3	85.2	70.0-126	
1,2-Dichloroethane	25.0	20.1	80.4	70.0-128	
1,1-Dichloroethene	25.0	25.6	102	71.0-124	
cis-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
trans-1,2-Dichloroethene	25.0	23.2	92.8	73.0-120	
1,2-Dichloropropane	25.0	21.0	84.0	77.0-125	
1,1-Dichloropropene	25.0	23.7	94.8	74.0-126	
1,3-Dichloropropane	25.0	24.3	97.2	80.0-120	
cis-1,3-Dichloropropene	25.0	22.0	88.0	80.0-123	
trans-1,3-Dichloropropene	25.0	22.8	91.2	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	14.8	59.2	33.0-144	
2,2-Dichloropropane	25.0	20.1	80.4	58.0-130	
Di-isopropyl ether	25.0	20.6	82.4	58.0-138	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	23.6	94.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	33.8	135	54.0-138	
2-Hexanone	125	98.0	78.4	67.0-149	
n-Hexane	25.0	20.8	83.2	57.0-133	
Iodomethane	125	98.7	79.0	33.0-147	
Isopropylbenzene	25.0	22.2	88.8	76.0-127	
p-Isopropyltoluene	25.0	26.5	106	76.0-125	
2-Butanone (MEK)	125	81.5	65.2	44.0-160	
Methylene Chloride	25.0	22.7	90.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	87.8	70.2	68.0-142	
Methyl tert-butyl ether	25.0	20.5	82.0	68.0-125	
Naphthalene	25.0	19.2	76.8	54.0-135	
n-Propylbenzene	25.0	22.8	91.2	77.0-124	
Styrene	25.0	24.4	97.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.8	95.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.3	81.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	23.1	92.4	69.0-132	
Tetrachloroethene	25.0	25.2	101	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.4	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	28.9	116	57.0-137	
1,1,1-Trichloroethane	25.0	20.9	83.6	73.0-124	
1,1,2-Trichloroethane	25.0	23.4	93.6	80.0-120	
Trichloroethene	25.0	23.0	92.0	78.0-124	
Trichlorofluoromethane	25.0	25.7	103	59.0-147	
1,2,3-Trichloropropane	25.0	21.3	85.2	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.0	96.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	24.5	98.0	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.3	93.2	76.0-122	
Vinyl acetate	125	92.6	74.1	11.0-160	
Vinyl chloride	25.0	25.2	101	67.0-131	
Xylenes, Total	75.0	71.6	95.5	79.0-123	
<i>(S) Toluene-d8</i>			98.4	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			96.6	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			81.0	70.0-130	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.  
 \* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

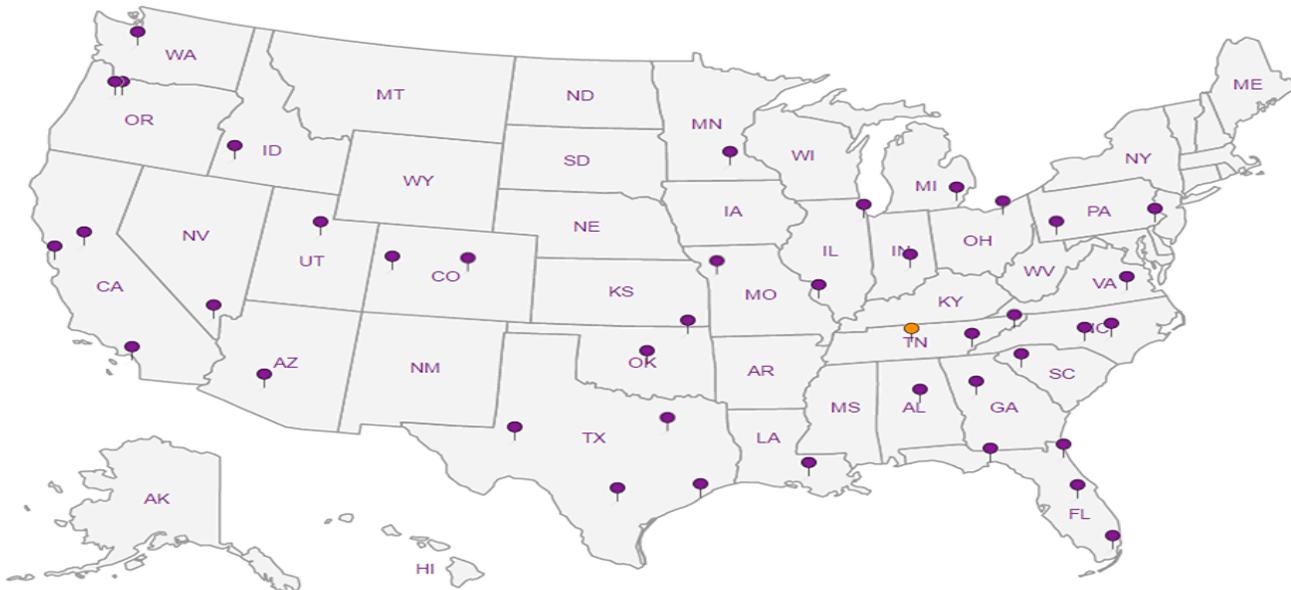
## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle

Billing Information:  
PES-Seattle

Pres Chk

Chain of Custody Page \_\_\_ of \_\_\_

Report to:  
Bill Haldeman/Brian O'neal

Email To:  
on file

Project Description: *American Linen*

City/State: *Seattle, WA*  
Collected:

Phone: *on file*  
Fax:

Client Project #  
*1413, 001.02.501E*

Lab Project #  
PESENVSWA-ALP

Collected by (print):  
*K. Zygas/B. Hecht/H. Cohen*

Site/Facility ID #:  
*AMERICAN LINEN*

P.O. #

Collected by (signature):  
*[Signature]*

Rush? (Lab MUST Be Notified)  
 Same Day  Five Day  
 Next Day  5 Day (Rad Only)  
 Two Day  10 Day (Rad Only)  
 Three Day

Quote #  
Date Results Needed

Immediately  
Packed on Ice N  Y

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-916-101119	Grab	GW	65	10/11/19	0800	9
SMW-3-101119		GW	15		0945	3
MW128-101119		GW	65		1045	9
MW124-101119		GW	115		1111	11
MW-307-101119		GW	80		1135	12
MW-214-101119		GW	14		1215	3
MW-312-101119		GW	20		1350	9
MW-308-101119		GW	40		1455	9
EQ-101119	Grab	GW	—	10/11/19	1440	12
TRIP-101119	—	GW	—	10/11/19	1600	2

\*\*NO3, SO4, Chloride\*\* 48 hour hold

Analysis / Container / Preservative	Pres Chk
NWTPHGX	
VOCs (V8260LLC)	
Total Fe Mn 6020	
TOC	
Alkalinity	
EEM (RSK175LL)	

12065 Lebanon Rd  
Mount Juliet, TN 37122  
Phone: 615-758-5858  
Phone: 800-767-5859  
Fax: 615-758-5859



L # *1149367*  
**J118**  
Acctnum: PESENVSWA  
Template:  
Prelogin:  
TSR: Brian Ford  
PB:  
Shipped Via:  
Remarks | Sample # (lab only)

\* Matrix:  
SS - Soil AIR - Air F - Filter  
GW - Groundwater B - Bioassay  
WW - WasteWater  
DW - Drinking Water  
OT - Other

Remarks:  
pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_  
Samples returned via:  
UPS FedEx Courier  
Tracking # *1145 2227 4141*

Sample Receipt Checklist  
 COC Seal Present/Intact:  Y  N  
 COC Signed/Accurate:  Y  N  
 Bottles arrive intact:  Y  N  
 Correct bottles used:  Y  N  
 Sufficient volume sent:  Y  N  
 If Applicable  
 VOA Zero Headspace:  Y  N  
 Preservation Correctly Checked:  Y  N

Relinquished by: (Signature) *[Signature]*

Date: *10-11-19*  
Time: *1600*

Received by: (Signature)

Trip Blank Received: Yes / No  
HCL / MeOH  
TBR

**RAD SCREEN: <0.5 mR/hr**

Relinquished by: (Signature)

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received by: (Signature)

Temp: \_\_\_\_\_ °C  
Bottles Received: *5, 6, 7, 3, 7, 6, 76*

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received for lab by: (Signature) *Delwante Kimpton*

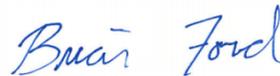
Date: *10/12/19*  
Time: *8:46*

Hold: \_\_\_\_\_  
Condition: *NCF / OK*

## PES Environmental, Inc.- WA

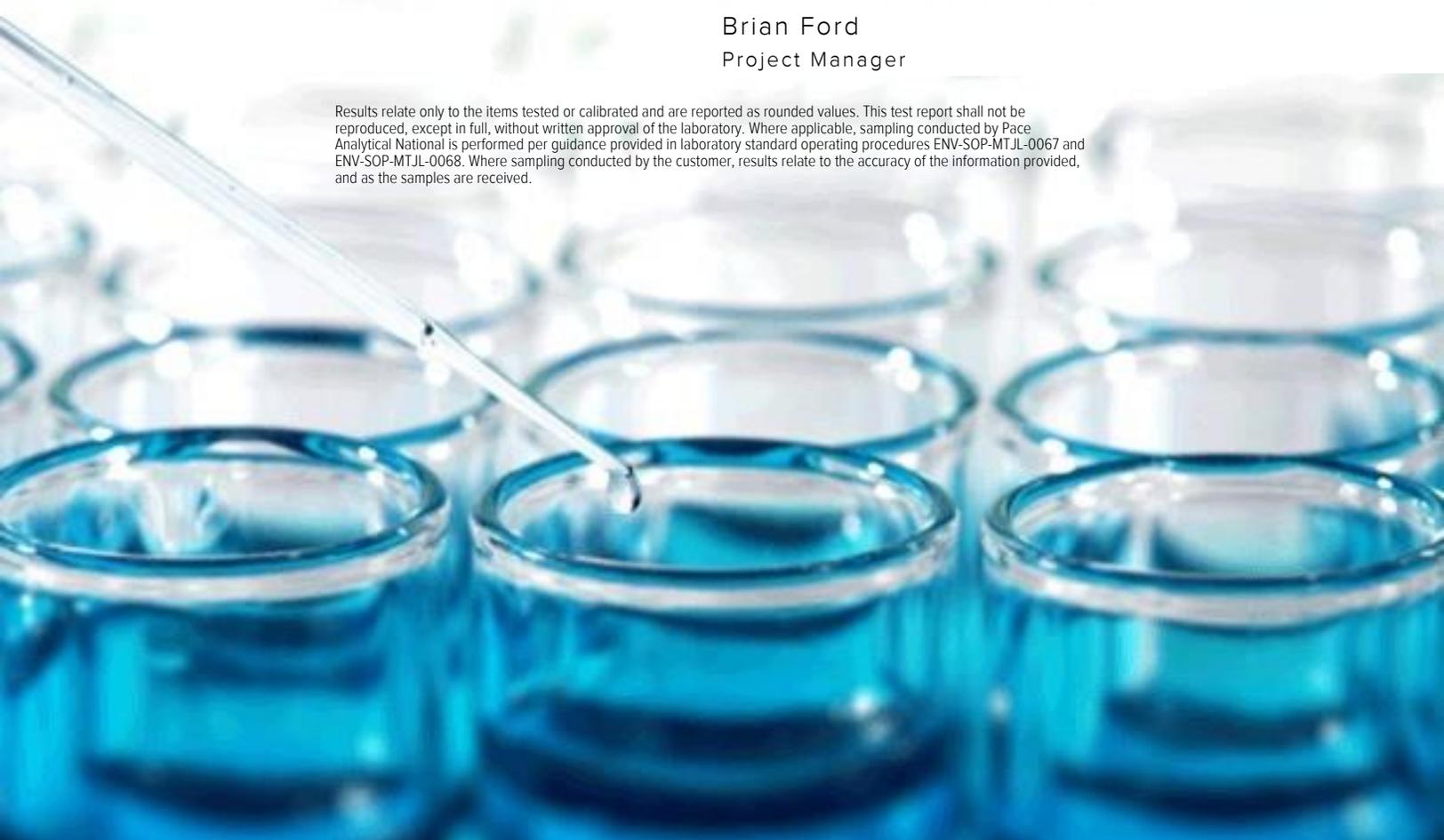
Sample Delivery Group: L1150336  
Samples Received: 10/16/2019  
Project Number: 1413.001.02.501E  
Description: AMERICAN LINEN  
Site: AMERICAN LINEN  
Report To: Brian O'Neal/Bill Haldeman  
1215 Fourth Ave., Suite 1350  
Seattle, WA 98161

Entire Report Reviewed By:



Brian Ford  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





<b>Cp: Cover Page</b>	<b>1</b>	<b>1</b> Cp
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	<b>2</b> Tc
<b>Cn: Case Narrative</b>	<b>6</b>	
<b>Sr: Sample Results</b>	<b>7</b>	<b>3</b> Ss
MW-917-101519 L1150336-01	7	
MW109-101519 L1150336-02	9	<b>4</b> Cn
MW-305-101519 L1150336-03	12	<b>5</b> Sr
MW126-101519 L1150336-04	15	
MW-306-101519 L1150336-05	17	<b>6</b> Qc
W-MW-01-101519 L1150336-06	20	
MW110-101519 L1150336-07	23	<b>7</b> Gl
MW-153-101519 L1150336-08	26	<b>8</b> Al
MW-107-101519 L1150336-09	29	
TB-101519 L1150336-10	32	<b>9</b> Sc
<b>Qc: Quality Control Summary</b>	<b>34</b>	
Wet Chemistry by Method 2320 B-2011	34	
Wet Chemistry by Method 9056A	36	
Wet Chemistry by Method 9060A	38	
Metals (ICPMS) by Method 6020B	39	
Volatile Organic Compounds (GC) by Method NWTPHGX	40	
Volatile Organic Compounds (GC) by Method RSK175	41	
Volatile Organic Compounds (GC/MS) by Method 8260C	43	
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<b>Al: Accreditations &amp; Locations</b>	<b>58</b>	
<b>Sc: Sample Chain of Custody</b>	<b>59</b>	

# SAMPLE SUMMARY



## MW-917-101519 L1150336-01 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 08:00  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:44	10/22/19 05:44	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:05	10/16/19 19:05	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 18:45	10/19/19 18:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:34	10/17/19 15:34	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:08	10/24/19 05:08	ACG	Mt. Juliet, TN

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW109-101519 L1150336-02 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 09:45  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:51	10/22/19 05:51	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:18	10/16/19 19:18	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 19:06	10/19/19 19:06	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:48	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:37	10/17/19 15:37	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:29	10/24/19 05:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	20	10/24/19 20:51	10/24/19 20:51	ACG	Mt. Juliet, TN

## MW-305-101519 L1150336-03 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 10:10  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366027	1	10/22/19 05:58	10/22/19 05:58	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:31	10/16/19 19:31	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 19:28	10/19/19 19:28	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:52	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 14:44	10/18/19 14:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 16:04	10/17/19 16:04	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 05:50	10/24/19 05:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	1	10/24/19 21:11	10/24/19 21:11	ACG	Mt. Juliet, TN

## MW126-101519 L1150336-04 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 11:00  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/21/19 23:52	10/21/19 23:52	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 19:44	10/16/19 19:44	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 21:17	10/19/19 21:17	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:55	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:42	10/17/19 15:42	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:10	10/24/19 06:10	ACG	Mt. Juliet, TN

## MW-306-101519 L1150336-05 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 11:40  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/21/19 23:59	10/21/19 23:59	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:22	10/16/19 20:22	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 21:31	10/19/19 21:31	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 14:59	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 15:07	10/18/19 15:07	BMB	Mt. Juliet, TN

# SAMPLE SUMMARY



## MW-306-101519 L1150336-05 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 11:40  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:44	10/17/19 15:44	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:31	10/24/19 06:31	ACG	Mt. Juliet, TN

1  
Cp

2  
Tc

3  
Ss

## W-MW-01-101519 L1150336-06 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 12:20  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:07	10/22/19 00:07	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:35	10/16/19 20:35	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 22:38	10/19/19 22:38	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 15:31	10/18/19 15:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:50	10/17/19 15:50	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 06:52	10/24/19 06:52	ACG	Mt. Juliet, TN

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

## MW110-101519 L1150336-07 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 14:20  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:15	10/22/19 00:15	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 20:47	10/16/19 20:47	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:00	10/19/19 23:00	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:53	10/17/19 15:53	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368527	1	10/24/19 07:12	10/24/19 07:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369128	50	10/24/19 21:32	10/24/19 21:32	ACG	Mt. Juliet, TN

9  
Sc

## MW-153-101519 L1150336-08 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 14:25  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:22	10/22/19 00:22	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 21:00	10/16/19 21:00	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:20	10/19/19 23:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 18:42	10/18/19 18:42	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	1	10/18/19 13:10	10/18/19 13:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 22:30	10/25/19 22:30	ADM	Mt. Juliet, TN

## MW-107-101519 L1150336-09 GW

Collected by  
KZ/BH/SM/HG  
Collected date/time  
10/15/19 14:00  
Received date/time  
10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1366029	1	10/22/19 00:30	10/22/19 00:30	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363847	1	10/16/19 21:13	10/16/19 21:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1365601	1	10/19/19 23:45	10/19/19 23:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364631	1	10/21/19 23:59	10/22/19 15:14	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 19:06	10/18/19 19:06	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364420	1	10/17/19 15:55	10/17/19 15:55	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	10	10/18/19 13:13	10/18/19 13:13	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369955	1	10/25/19 22:50	10/25/19 22:50	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370146	10	10/27/19 15:29	10/27/19 15:29	ACG	Mt. Juliet, TN

# SAMPLE SUMMARY



TB-101519 L1150336-10 GW

Collected by: KZ/BH/SM/HG  
 Collected date/time: 10/15/19 00:00  
 Received date/time: 10/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1365317	1	10/18/19 12:20	10/18/19 12:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1370189	1	10/26/19 14:49	10/26/19 14:49	ACG	Mt. Juliet, TN

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford  
Project Manager

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	200000		2710	20000	1	10/22/2019 05:44	<a href="#">WG1366027</a>

Sample Narrative:

L1150336-01 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7780		51.9	1000	1	10/16/2019 19:05	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 19:05	<a href="#">WG1363847</a>
Sulfate	3890	J	77.4	5000	1	10/16/2019 19:05	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5050	B	102	1000	1	10/19/2019 18:45	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	388		15.0	100	1	10/22/2019 14:13	<a href="#">WG1364631</a>
Manganese	327		0.250	5.00	1	10/22/2019 14:13	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	317		0.287	0.678	1	10/17/2019 15:34	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 15:34	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 15:34	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.34	J	1.05	25.0	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 05:08	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<a href="#">JO</a>	0.101	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<a href="#">JO J4</a>	0.130	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<a href="#">JO J4</a>	0.121	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<a href="#">JO J4</a>	0.147	1.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<a href="#">JO</a>	0.257	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
n-Hexane	U	<a href="#">JO</a>	0.305	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<a href="#">JO</a>	0.130	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Toluene	U		0.412	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<a href="#">JO J4</a>	0.186	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Vinyl acetate	U	<a href="#">JO</a>	0.645	5.00	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:08	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:08	<a href="#">WG1368527</a>
(S) Toluene-d8	99.4			80.0-120		10/24/2019 05:08	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 05:08	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 05:08	<a href="#">WG1368527</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	628000		2710	20000	1	10/22/2019 05:51	<a href="#">WG1366027</a>

Sample Narrative:

L1150336-02 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	13700		51.9	1000	1	10/16/2019 19:18	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 19:18	<a href="#">WG1363847</a>
Sulfate	9120		77.4	5000	1	10/16/2019 19:18	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	10400		102	1000	1	10/19/2019 19:06	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	14400		15.0	100	1	10/22/2019 14:48	<a href="#">WG1364631</a>
Manganese	4100		0.250	5.00	1	10/22/2019 14:48	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4950		0.287	0.678	1	10/17/2019 15:37	<a href="#">WG1364420</a>
Ethane	25.6		0.296	1.29	1	10/17/2019 15:37	<a href="#">WG1364420</a>
Ethene	6.99		0.422	1.27	1	10/17/2019 15:37	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 05:29	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<a href="#">JO</a>	0.101	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<a href="#">JO J4</a>	0.130	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<a href="#">JO J4</a>	0.121	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1-Dichloroethene	0.768		0.188	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	397		1.87	10.0	20	10/24/2019 20:51	<a href="#">WG1369128</a>
trans-1,2-Dichloroethene	0.891		0.152	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<a href="#">JO J4</a>	0.147	1.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<a href="#">JO</a>	0.257	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
n-Hexane	U	<a href="#">JO</a>	0.305	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<a href="#">JO</a>	0.130	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Toluene	U		0.412	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<a href="#">JO J4</a>	0.186	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Trichloroethene	1.03		0.153	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Vinyl acetate	U	<a href="#">JO</a>	0.645	5.00	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Vinyl chloride	109		0.118	0.500	1	10/24/2019 05:29	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:29	<a href="#">WG1368527</a>
(S) Toluene-d8	102			80.0-120		10/24/2019 05:29	<a href="#">WG1368527</a>
(S) Toluene-d8	110			80.0-120		10/24/2019 20:51	<a href="#">WG1369128</a>
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 05:29	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 20:51	<a href="#">WG1369128</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	112			70.0-130		10/24/2019 05:29	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/24/2019 20:51	<a href="#">WG1369128</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	114000		2710	20000	1	10/22/2019 05:58	<a href="#">WG1366027</a>

Sample Narrative:

L1150336-03 WG1366027: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	18000		51.9	1000	1	10/16/2019 19:31	<a href="#">WG1363847</a>
Nitrate	1630		22.7	100	1	10/16/2019 19:31	<a href="#">WG1363847</a>
Sulfate	28000		77.4	5000	1	10/16/2019 19:31	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3340	<u>B</u>	102	1000	1	10/19/2019 19:28	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	2580		15.0	100	1	10/22/2019 14:52	<a href="#">WG1364631</a>
Manganese	197		0.250	5.00	1	10/22/2019 14:52	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 14:44	<a href="#">WG1365317</a>
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 14:44	<a href="#">WG1365317</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 16:04	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 16:04	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 16:04	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 05:50	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/24/2019 05:50	WG1368527
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 05:50	WG1368527
Chloroethane	U		0.141	2.50	1	10/24/2019 05:50	WG1368527
Chloroform	U		0.0860	0.500	1	10/24/2019 05:50	WG1368527
Chloromethane	U		0.153	1.25	1	10/24/2019 05:50	WG1368527
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 05:50	WG1368527
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 05:50	WG1368527
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 05:50	WG1368527
Dibromomethane	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichlorobenzene	U	JO	0.101	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichlorobenzene	U	JO J4	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,4-Dichlorobenzene	U	JO J4	0.121	0.500	1	10/24/2019 05:50	WG1368527
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 05:50	WG1368527
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 21:11	WG1369128
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 05:50	WG1368527
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 05:50	WG1368527
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 05:50	WG1368527
1,3-Dichloropropane	U	JO J4	0.147	1.00	1	10/24/2019 05:50	WG1368527
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 05:50	WG1368527
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 05:50	WG1368527
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/24/2019 05:50	WG1368527
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 05:50	WG1368527
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 05:50	WG1368527
Ethylbenzene	U		0.158	0.500	1	10/24/2019 05:50	WG1368527
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 05:50	WG1368527
2-Hexanone	U		0.757	5.00	1	10/24/2019 05:50	WG1368527
n-Hexane	U	JO	0.305	5.00	1	10/24/2019 05:50	WG1368527
Iodomethane	U		0.377	10.0	1	10/24/2019 05:50	WG1368527
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 05:50	WG1368527
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 05:50	WG1368527
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 05:50	WG1368527
Methylene Chloride	U		1.07	2.50	1	10/24/2019 05:50	WG1368527
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 05:50	WG1368527
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 05:50	WG1368527
Naphthalene	U		0.174	2.50	1	10/24/2019 05:50	WG1368527
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 05:50	WG1368527
Styrene	U		0.117	0.500	1	10/24/2019 05:50	WG1368527
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 05:50	WG1368527
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 05:50	WG1368527
Toluene	U		0.412	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 05:50	WG1368527
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 05:50	WG1368527
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 05:50	WG1368527
1,1,2-Trichloroethane	U	JO J4	0.186	0.500	1	10/24/2019 05:50	WG1368527
Trichloroethene	U		0.153	0.500	1	10/24/2019 05:50	WG1368527
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 05:50	WG1368527
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 05:50	WG1368527
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 05:50	WG1368527
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 05:50	WG1368527
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 05:50	WG1368527

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Vinyl chloride	U		0.118	0.500	1	10/24/2019 05:50	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 05:50	<a href="#">WG1368527</a>
(S) Toluene-d8	101			80.0-120		10/24/2019 05:50	<a href="#">WG1368527</a>
(S) Toluene-d8	112			80.0-120		10/24/2019 21:11	<a href="#">WG1369128</a>
(S) 4-Bromofluorobenzene	103			77.0-126		10/24/2019 05:50	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	116			77.0-126		10/24/2019 21:11	<a href="#">WG1369128</a>
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 05:50	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/24/2019 21:11	<a href="#">WG1369128</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	210000		2710	20000	1	10/21/2019 23:52	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-04 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7540		51.9	1000	1	10/16/2019 19:44	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 19:44	<a href="#">WG1363847</a>
Sulfate	3620	J	77.4	5000	1	10/16/2019 19:44	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5120	B	102	1000	1	10/19/2019 21:17	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	407		15.0	100	1	10/22/2019 14:55	<a href="#">WG1364631</a>
Manganese	335		0.250	5.00	1	10/22/2019 14:55	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	277		0.287	0.678	1	10/17/2019 15:42	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 15:42	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 15:42	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.30	J	1.05	25.0	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 06:10	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<a href="#">JO</a>	0.101	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<a href="#">JO J4</a>	0.130	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<a href="#">JO J4</a>	0.121	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<a href="#">JO J4</a>	0.147	1.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<a href="#">JO</a>	0.257	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
n-Hexane	U	<a href="#">JO</a>	0.305	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<a href="#">JO</a>	0.130	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Toluene	U		0.412	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<a href="#">JO J4</a>	0.186	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Vinyl acetate	U	<a href="#">JO</a>	0.645	5.00	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:10	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:10	<a href="#">WG1368527</a>
(S) Toluene-d8	99.8			80.0-120		10/24/2019 06:10	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	104			77.0-126		10/24/2019 06:10	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 06:10	<a href="#">WG1368527</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	187000		2710	20000	1	10/21/2019 23:59	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-05 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	8790		51.9	1000	1	10/16/2019 20:22	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 20:22	<a href="#">WG1363847</a>
Sulfate	80900		77.4	5000	1	10/16/2019 20:22	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2320	<u>B</u>	102	1000	1	10/19/2019 21:31	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3810		15.0	100	1	10/22/2019 14:59	<a href="#">WG1364631</a>
Manganese	608		0.250	5.00	1	10/22/2019 14:59	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:07	<a href="#">WG1365317</a>
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:07	<a href="#">WG1365317</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	10/17/2019 15:44	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 15:44	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 15:44	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 11:40

L1150336

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 06:31	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<u>JO</u>	0.101	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<u>JO J4</u>	0.130	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<u>JO J4</u>	0.121	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<u>JO J4</u>	0.147	1.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
n-Hexane	U	<u>JO</u>	0.305	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<u>JO</u>	0.130	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Toluene	U		0.412	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<u>JO J4</u>	0.186	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Trichloroethene	U		0.153	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Vinyl chloride	U		0.118	0.500	1	10/24/2019 06:31	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:31	<a href="#">WG1368527</a>
<i>(S) Toluene-d8</i>	99.6			80.0-120		10/24/2019 06:31	<a href="#">WG1368527</a>
<i>(S) 4-Bromofluorobenzene</i>	105			77.0-126		10/24/2019 06:31	<a href="#">WG1368527</a>
<i>(S) 1,2-Dichloroethane-d4</i>	114			70.0-130		10/24/2019 06:31	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	239000		2710	20000	1	10/22/2019 00:07	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-06 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	31600		51.9	1000	1	10/16/2019 20:35	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 20:35	<a href="#">WG1363847</a>
Sulfate	73800		77.4	5000	1	10/16/2019 20:35	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2490	<u>B</u>	102	1000	1	10/19/2019 22:38	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	1160		15.0	100	1	10/22/2019 15:03	<a href="#">WG1364631</a>
Manganese	320		0.250	5.00	1	10/22/2019 15:03	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 15:31	<a href="#">WG1365317</a>
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 15:31	<a href="#">WG1365317</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	384		0.287	0.678	1	10/17/2019 15:50	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 15:50	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 15:50	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Benzene	U		0.0896	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 12:20

L1150336

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Chlorodibromomethane	U	<u>JO</u>	0.128	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 06:52	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<u>JO</u>	0.101	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<u>JO J4</u>	0.130	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<u>JO J4</u>	0.121	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	0.408	<u>J</u>	0.0933	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<u>JO J4</u>	0.147	1.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
n-Hexane	U	<u>JO</u>	0.305	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<u>JO</u>	0.130	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Toluene	U		0.412	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<u>JO J4</u>	0.186	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Trichloroethene	0.350	<u>J</u>	0.153	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U	<u>JO</u>	0.645	5.00	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Vinyl chloride	7.36		0.118	0.500	1	10/24/2019 06:52	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 06:52	<a href="#">WG1368527</a>
(S) Toluene-d8	99.4			80.0-120		10/24/2019 06:52	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	102			77.0-126		10/24/2019 06:52	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	113			70.0-130		10/24/2019 06:52	<a href="#">WG1368527</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	465000		2710	20000	1	10/22/2019 00:15	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-07 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	10/16/2019 20:47	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 20:47	<a href="#">WG1363847</a>
Sulfate	73200		77.4	5000	1	10/16/2019 20:47	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	7050		102	1000	1	10/19/2019 23:00	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1290		15.0	100	1	10/22/2019 15:07	<a href="#">WG1364631</a>
Manganese	3430		0.250	5.00	1	10/22/2019 15:07	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5020		0.287	0.678	1	10/17/2019 15:53	<a href="#">WG1364420</a>
Ethane	U		0.296	1.29	1	10/17/2019 15:53	<a href="#">WG1364420</a>
Ethene	U		0.422	1.27	1	10/17/2019 15:53	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.11	J	1.05	25.0	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Acrylonitrile	U		0.873	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Benzene	0.233	J	0.0896	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Bromobenzene	U		0.133	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Bromochloromethane	U		0.145	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Bromoform	U		0.186	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Bromomethane	U		0.157	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Carbon disulfide	U		0.101	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Chlorobenzene	U		0.140	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Chlorodibromomethane	U	JO	0.128	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Chloroethane	U		0.141	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Chloroform	U		0.0860	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Chloromethane	U		0.153	1.25	1	10/24/2019 07:12	<a href="#">WG1368527</a>
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Dibromomethane	U		0.117	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2-Dichlorobenzene	U	<a href="#">JO</a>	0.101	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,3-Dichlorobenzene	U	<a href="#">JO J4</a>	0.130	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,4-Dichlorobenzene	U	<a href="#">JO J4</a>	0.121	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1-Dichloroethene	5.01		0.188	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
cis-1,2-Dichloroethene	574		4.67	25.0	50	10/24/2019 21:32	<a href="#">WG1369128</a>
trans-1,2-Dichloroethene	3.86		0.152	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,3-Dichloropropane	U	<a href="#">JO J4</a>	0.147	1.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
trans-1,4-Dichloro-2-butene	U	<a href="#">JO</a>	0.257	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Ethylbenzene	U		0.158	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
2-Hexanone	U		0.757	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
n-Hexane	U	<a href="#">JO</a>	0.305	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Iodomethane	U		0.377	10.0	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Methylene Chloride	U		1.07	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Naphthalene	U		0.174	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Styrene	U		0.117	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1,2,2-Tetrachloroethane	U	<a href="#">JO</a>	0.130	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Tetrachloroethene	1180		9.95	25.0	50	10/24/2019 21:32	<a href="#">WG1369128</a>
Toluene	U		0.412	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,1,2-Trichloroethane	U	<a href="#">JO J4</a>	0.186	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Trichloroethene	498		7.65	25.0	50	10/24/2019 21:32	<a href="#">WG1369128</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Vinyl acetate	U	<a href="#">JO</a>	0.645	5.00	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Vinyl chloride	0.853		0.118	0.500	1	10/24/2019 07:12	<a href="#">WG1368527</a>
Xylenes, Total	U		0.316	1.50	1	10/24/2019 07:12	<a href="#">WG1368527</a>
(S) Toluene-d8	98.6			80.0-120		10/24/2019 07:12	<a href="#">WG1368527</a>
(S) Toluene-d8	112			80.0-120		10/24/2019 21:32	<a href="#">WG1369128</a>
(S) 4-Bromofluorobenzene	107			77.0-126		10/24/2019 07:12	<a href="#">WG1368527</a>
(S) 4-Bromofluorobenzene	112			77.0-126		10/24/2019 21:32	<a href="#">WG1369128</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
(S) 1,2-Dichloroethane-d4	114			70.0-130		10/24/2019 07:12	<a href="#">WG1368527</a>
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/24/2019 21:32	<a href="#">WG1369128</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	174000		2710	20000	1	10/22/2019 00:22	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-08 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10500		51.9	1000	1	10/16/2019 21:00	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 21:00	<a href="#">WG1363847</a>
Sulfate	8290		77.4	5000	1	10/16/2019 21:00	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2320	<u>B</u>	102	1000	1	10/19/2019 23:20	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	6770		15.0	100	1	10/22/2019 15:10	<a href="#">WG1364631</a>
Manganese	420		0.250	5.00	1	10/22/2019 15:10	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 18:42	<a href="#">WG1365317</a>
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 18:42	<a href="#">WG1365317</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	20.2		0.287	0.678	1	10/18/2019 13:10	<a href="#">WG1365165</a>
Ethane	U		0.296	1.29	1	10/18/2019 13:10	<a href="#">WG1365165</a>
Ethene	U		0.422	1.27	1	10/18/2019 13:10	<a href="#">WG1365165</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	<u>JO</u>	1.05	25.0	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Benzene	U		0.0896	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Bromobenzene	U	<u>JO</u>	0.133	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Bromoform	U		0.186	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Bromomethane	U		0.157	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Carbon disulfide	U		0.101	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 14:25

L1150336

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Chloroethane	U		0.141	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Chloroform	U		0.0860	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Chloromethane	U	<u>JO</u>	0.153	1.25	1	10/25/2019 22:30	<a href="#">WG1369955</a>
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
trans-1,4-Dichloro-2-butene	U	<u>JO</u>	0.257	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
n-Hexane	U		0.305	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Iodomethane	U		0.377	10.0	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Naphthalene	U		0.174	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Styrene	U		0.117	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Tetrachloroethene	U		0.199	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Toluene	U		0.412	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Trichloroethene	U		0.153	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Vinyl chloride	U		0.118	0.500	1	10/25/2019 22:30	<a href="#">WG1369955</a>
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:30	<a href="#">WG1369955</a>
<i>(S) Toluene-d8</i>	112			80.0-120		10/25/2019 22:30	<a href="#">WG1369955</a>
<i>(S) 4-Bromofluorobenzene</i>	113			77.0-126		10/25/2019 22:30	<a href="#">WG1369955</a>
<i>(S) 1,2-Dichloroethane-d4</i>	102			70.0-130		10/25/2019 22:30	<a href="#">WG1369955</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	667000		2710	20000	1	10/22/2019 00:30	<a href="#">WG1366029</a>

Sample Narrative:

L1150336-09 WG1366029: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	26100		51.9	1000	1	10/16/2019 21:13	<a href="#">WG1363847</a>
Nitrate	U		22.7	100	1	10/16/2019 21:13	<a href="#">WG1363847</a>
Sulfate	68700		77.4	5000	1	10/16/2019 21:13	<a href="#">WG1363847</a>

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	11300		102	1000	1	10/19/2019 23:45	<a href="#">WG1365601</a>

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Iron	4600		15.0	100	1	10/22/2019 15:14	<a href="#">WG1364631</a>
Manganese	1170		0.250	5.00	1	10/22/2019 15:14	<a href="#">WG1364631</a>

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	365		31.6	100	1	10/18/2019 19:06	<a href="#">WG1365317</a>
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		10/18/2019 19:06	<a href="#">WG1365317</a>

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Methane	12900		2.87	6.78	10	10/18/2019 13:13	<a href="#">WG1365165</a>
Ethane	34.1		0.296	1.29	1	10/17/2019 15:55	<a href="#">WG1364420</a>
Ethene	29.6		0.422	1.27	1	10/17/2019 15:55	<a href="#">WG1364420</a>

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Acetone	1.21	J JO	1.05	25.0	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Acrylonitrile	U		0.873	5.00	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Benzene	0.167	J	0.0896	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Bromobenzene	U	JO	0.133	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Bromodichloromethane	U		0.0800	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Bromochloromethane	U		0.145	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Bromoform	U		0.186	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Bromomethane	U		0.157	2.50	1	10/25/2019 22:50	<a href="#">WG1369955</a>
n-Butylbenzene	U		0.143	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
sec-Butylbenzene	U		0.134	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
tert-Butylbenzene	U		0.183	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Carbon disulfide	0.342	J	0.101	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Carbon tetrachloride	U		0.159	0.500	1	10/25/2019 22:50	<a href="#">WG1369955</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/15/19 14:00

L1150336

## Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/25/2019 22:50	WG1369955
Chlorodibromomethane	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
Chloroethane	3.45		0.141	2.50	1	10/25/2019 22:50	WG1369955
Chloroform	U		0.0860	0.500	1	10/25/2019 22:50	WG1369955
Chloromethane	U	JO	0.153	1.25	1	10/25/2019 22:50	WG1369955
2-Chlorotoluene	U		0.111	0.500	1	10/25/2019 22:50	WG1369955
4-Chlorotoluene	U		0.0972	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/25/2019 22:50	WG1369955
1,2-Dibromoethane	U		0.193	0.500	1	10/25/2019 22:50	WG1369955
Dibromomethane	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichlorobenzene	U		0.101	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichlorobenzene	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,4-Dichlorobenzene	U		0.121	0.500	1	10/25/2019 22:50	WG1369955
Dichlorodifluoromethane	U		0.127	2.50	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethane	U		0.114	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloroethane	U		0.108	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloroethene	3.27		0.188	0.500	1	10/25/2019 22:50	WG1369955
cis-1,2-Dichloroethene	333		0.933	5.00	10	10/27/2019 15:29	WG1370146
trans-1,2-Dichloroethene	7.04		0.152	0.500	1	10/25/2019 22:50	WG1369955
1,2-Dichloropropane	U		0.190	0.500	1	10/25/2019 22:50	WG1369955
1,1-Dichloropropene	U		0.128	0.500	1	10/25/2019 22:50	WG1369955
1,3-Dichloropropane	U		0.147	1.00	1	10/25/2019 22:50	WG1369955
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/25/2019 22:50	WG1369955
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/25/2019 22:50	WG1369955
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00	1	10/25/2019 22:50	WG1369955
2,2-Dichloropropane	U		0.0929	0.500	1	10/25/2019 22:50	WG1369955
Di-isopropyl ether	U		0.0924	0.500	1	10/25/2019 22:50	WG1369955
Ethylbenzene	U		0.158	0.500	1	10/25/2019 22:50	WG1369955
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/25/2019 22:50	WG1369955
2-Hexanone	U		0.757	5.00	1	10/25/2019 22:50	WG1369955
n-Hexane	U		0.305	5.00	1	10/25/2019 22:50	WG1369955
Iodomethane	U		0.377	10.0	1	10/25/2019 22:50	WG1369955
Isopropylbenzene	U		0.126	0.500	1	10/25/2019 22:50	WG1369955
p-Isopropyltoluene	U		0.138	0.500	1	10/25/2019 22:50	WG1369955
2-Butanone (MEK)	U		1.28	5.00	1	10/25/2019 22:50	WG1369955
Methylene Chloride	U		1.07	2.50	1	10/25/2019 22:50	WG1369955
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/25/2019 22:50	WG1369955
Methyl tert-butyl ether	U		0.102	0.500	1	10/25/2019 22:50	WG1369955
Naphthalene	U		0.174	2.50	1	10/25/2019 22:50	WG1369955
n-Propylbenzene	U		0.162	0.500	1	10/25/2019 22:50	WG1369955
Styrene	U		0.117	0.500	1	10/25/2019 22:50	WG1369955
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/25/2019 22:50	WG1369955
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
Tetrachloroethene	41.7		0.199	0.500	1	10/25/2019 22:50	WG1369955
Toluene	0.572		0.412	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/25/2019 22:50	WG1369955
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/25/2019 22:50	WG1369955
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/25/2019 22:50	WG1369955
1,1,2-Trichloroethane	U		0.186	0.500	1	10/25/2019 22:50	WG1369955
Trichloroethene	138		0.153	0.500	1	10/25/2019 22:50	WG1369955
Trichlorofluoromethane	U		0.130	2.50	1	10/25/2019 22:50	WG1369955
1,2,3-Trichloropropane	U		0.247	2.50	1	10/25/2019 22:50	WG1369955
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/25/2019 22:50	WG1369955
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/25/2019 22:50	WG1369955
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/25/2019 22:50	WG1369955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Vinyl acetate	U		0.645	5.00	1	10/25/2019 22:50	<a href="#">WG1369955</a>
Vinyl chloride	216		1.18	5.00	10	10/27/2019 15:29	<a href="#">WG1370146</a>
Xylenes, Total	U		0.316	1.50	1	10/25/2019 22:50	<a href="#">WG1369955</a>
(S) Toluene-d8	111			80.0-120		10/25/2019 22:50	<a href="#">WG1369955</a>
(S) Toluene-d8	95.1			80.0-120		10/27/2019 15:29	<a href="#">WG1370146</a>
(S) 4-Bromofluorobenzene	112			77.0-126		10/25/2019 22:50	<a href="#">WG1369955</a>
(S) 4-Bromofluorobenzene	92.2			77.0-126		10/27/2019 15:29	<a href="#">WG1370146</a>
(S) 1,2-Dichloroethane-d4	104			70.0-130		10/25/2019 22:50	<a href="#">WG1369955</a>
(S) 1,2-Dichloroethane-d4	101			70.0-130		10/27/2019 15:29	<a href="#">WG1370146</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 12:20	<a href="#">WG1365317</a>
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120		10/18/2019 12:20	<a href="#">WG1365317</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Acrylonitrile	U		0.873	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Benzene	U		0.0896	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Bromobenzene	U		0.133	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Bromodichloromethane	U		0.0800	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Bromochloromethane	U		0.145	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Bromoform	U		0.186	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Bromomethane	U	<u>JO</u>	0.157	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
n-Butylbenzene	U		0.143	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
sec-Butylbenzene	U		0.134	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
tert-Butylbenzene	U		0.183	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Carbon disulfide	0.146	<u>J</u>	0.101	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Carbon tetrachloride	U		0.159	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Chlorobenzene	U		0.140	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Chlorodibromomethane	U		0.128	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Chloroethane	U		0.141	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Chloroform	U		0.0860	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Chloromethane	U		0.153	1.25	1	10/26/2019 14:49	<a href="#">WG1370189</a>
2-Chlorotoluene	U		0.111	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
4-Chlorotoluene	U		0.0972	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2-Dibromoethane	U		0.193	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Dibromomethane	U		0.117	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2-Dichlorobenzene	U		0.101	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,3-Dichlorobenzene	U		0.130	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,4-Dichlorobenzene	U		0.121	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Dichlorodifluoromethane	U		0.127	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1-Dichloroethane	U		0.114	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2-Dichloroethane	U		0.108	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1-Dichloroethene	U		0.188	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
trans-1,2-Dichloroethene	0.365	<u>J</u>	0.152	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2-Dichloropropane	U		0.190	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1-Dichloropropene	U		0.128	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,3-Dichloropropane	U		0.147	1.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
2,2-Dichloropropane	U		0.0929	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Di-isopropyl ether	U		0.0924	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Ethylbenzene	U		0.158	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
2-Hexanone	U		0.757	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
n-Hexane	U		0.305	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Iodomethane	U	<u>JO</u>	0.377	10.0	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Isopropylbenzene	U	<u>JO</u>	0.126	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
p-Isopropyltoluene	U		0.138	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
2-Butanone (MEK)	U		1.28	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Methyl tert-butyl ether	U		0.102	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Naphthalene	0.910	<u>BJ</u>	0.174	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
n-Propylbenzene	U		0.162	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Styrene	U		0.117	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1,2-Trichlorotrifluoroethane	U	<u>JO</u>	0.164	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Tetrachloroethene	U		0.199	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Toluene	U		0.412	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1,1-Trichloroethane	U	<u>JO</u>	0.0940	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,1,2-Trichloroethane	U		0.186	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Trichloroethene	U	<u>JO</u>	0.153	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Trichlorofluoromethane	U		0.130	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2,3-Trichloropropane	U		0.247	2.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Vinyl acetate	U		0.645	5.00	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Vinyl chloride	U		0.118	0.500	1	10/26/2019 14:49	<a href="#">WG1370189</a>
Xylenes, Total	U		0.316	1.50	1	10/26/2019 14:49	<a href="#">WG1370189</a>
(S) Toluene-d8	97.4			80.0-120		10/26/2019 14:49	<a href="#">WG1370189</a>
(S) 4-Bromofluorobenzene	94.4			77.0-126		10/26/2019 14:49	<a href="#">WG1370189</a>
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		10/26/2019 14:49	<a href="#">WG1370189</a>

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3463464-1 10/22/19 02:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	3910	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1149909-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149909-01 10/22/19 03:44 • (DUP) R3463464-2 10/22/19 03:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	369000	368000	1	0.0475		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1150335-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150335-01 10/22/19 05:21 • (DUP) R3463464-4 10/22/19 05:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	532000	533000	1	0.296		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3463464-3 10/22/19 04:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	103000	103	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3463428-1 10/21/19 21:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	4460	↓	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1150748-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150748-01 10/21/19 23:29 • (DUP) R3463428-2 10/21/19 23:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	50300	50300	1	0.0876		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1150748-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1150748-06 10/22/19 02:05 • (DUP) R3463428-4 10/22/19 02:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	33700	33600	1	0.291		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3463428-3 10/22/19 00:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3461831-1 10/16/19 10:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	86.7	J	77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150320-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1150320-06 10/16/19 15:41 • (DUP) R3461831-3 10/16/19 15:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	10000	9910	1	1.39		15
Nitrate	49.4	47.0	1	4.98	J	15
Sulfate	15300	15200	1	1.07		15

L1150339-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1150339-10 10/16/19 21:26 • (DUP) R3461831-5 10/16/19 21:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	72100	72300	1	0.176		15
Nitrate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3461831-2 10/16/19 10:53

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39800	99.5	80.0-120	
Nitrate	8000	8190	102	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1150320-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1150320-09 10/16/19 16:06 • (MS) R3461831-4 10/16/19 16:19

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	26500	75200	97.5	1	80.0-120	
Nitrate	5000	211	5210	100	1	80.0-120	



L1150320-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1150320-09 10/16/19 16:06 • (MS) R3461831-4 10/16/19 16:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	45400	93100	95.4	1	80.0-120	

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/16/19 21:26 • (MS) R3461831-6 10/16/19 21:51 • (MSD) R3461831-7 10/16/19 22:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	72100	118000	118000	92.0	91.2	1	80.0-120	E	E	0.350	15
Nitrate	5000	U	5080	5060	102	101	1	80.0-120			0.483	15

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462895-1 10/19/19 12:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TOC (Total Organic Carbon)	581	↓	102	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150336-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-03 10/19/19 19:28 • (DUP) R3462895-3 10/19/19 19:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	3340	3330	1	0.450		20

L1150336-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-09 10/19/19 23:45 • (DUP) R3462895-6 10/20/19 00:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
TOC (Total Organic Carbon)	11300	11200	1	0.979		20

Laboratory Control Sample (LCS)

(LCS) R3462895-2 10/19/19 13:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
TOC (Total Organic Carbon)	75000	68400	91.2	85.0-115	

L1150336-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150336-05 10/19/19 21:31 • (MS) R3462895-4 10/19/19 21:54 • (MSD) R3462895-5 10/19/19 22:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	2320	50000	48000	95.4	91.4	1	80.0-120			4.08	20

L1150505-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150505-08 10/20/19 02:35 • (MS) R3462895-7 10/20/19 02:53 • (MSD) R3462895-8 10/20/19 03:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TOC (Total Organic Carbon)	50000	843	47200	46900	92.8	92.0	1	80.0-120			0.829	20



Method Blank (MB)

(MB) R3463726-1 10/22/19 14:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Iron	U		15.0	100
Manganese	0.261	J	0.250	5.00

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463726-2 10/22/19 14:05 • (LCSD) R3463726-3 10/22/19 14:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Iron	5000	4950	5110	99.0	102	80.0-120			3.11	20
Manganese	50.0	48.7	50.4	97.4	101	80.0-120			3.49	20

5 Sr

6 Qc

L1150336-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150336-01 10/22/19 14:13 • (MS) R3463726-5 10/22/19 14:20 • (MSD) R3463726-6 10/22/19 14:24

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Iron	5000	388	5490	5310	102	98.5	1	75.0-125			3.27	20
Manganese	50.0	327	385	372	117	90.5	1	75.0-125			3.44	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462806-3 10/18/19 11:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3462806-2 10/18/19 10:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5940	108	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			86.7	78.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3462155-1 10/17/19 14:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1150299-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150299-08 10/17/19 14:54 • (DUP) R3462155-2 10/17/19 15:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	247	242	1	2.20		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1150336-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-03 10/17/19 16:04 • (DUP) R3462155-4 10/17/19 16:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462155-3 10/17/19 16:00 • (LCSD) R3462155-5 10/17/19 16:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.1	69.7	108	103	85.0-115			4.87	20
Ethane	129	129	127	100	98.1	85.0-115			1.96	20
Ethene	127	136	133	107	104	85.0-115			2.30	20



Method Blank (MB)

(MB) R3462507-1 10/18/19 13:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1150336-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-08 10/18/19 13:10 • (DUP) R3462507-2 10/18/19 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	20.2	22.0	1	8.39		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462507-5 10/18/19 13:50 • (LCSD) R3462507-6 10/18/19 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.3	71.6	107	106	85.0-115			0.913	20
Ethane	129	127	127	98.2	98.7	85.0-115			0.516	20
Ethene	127	133	133	105	105	85.0-115			0.356	20

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/18/19 13:42 • (MS) R3462507-3 10/18/19 13:45 • (MSD) R3462507-4 10/18/19 13:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	10400	10600	11000	19.7	74.1	10	85.0-115	V	V	3.43	20
Ethane	129	380	1800	1480	110	85.0	10	85.0-115			19.6	20
Ethene	127	741	2220	1900	116	91.0	10	85.0-115	J5		15.6	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3464735-2 10/23/19 22:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U	JO	0.101	0.500
1,3-Dichlorobenzene	U	JO	0.130	0.500
1,4-Dichlorobenzene	U	JO	0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U	JO	0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U	JO	0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3464735-2 10/23/19 22:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.419	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U	JO	0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.220	J	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U	JO	0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.169	J	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U	JO	0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U	JO	0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	105			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3464735-1 10/23/19 22:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	102	81.6	19.0-160	
Acrylonitrile	125	108	86.4	55.0-149	
Benzene	25.0	21.5	86.0	70.0-123	
Bromobenzene	25.0	20.0	80.0	73.0-121	
Bromodichloromethane	25.0	24.5	98.0	75.0-120	
Bromochloromethane	25.0	23.0	92.0	76.0-122	
Bromoform	25.0	22.5	90.0	68.0-132	
Bromomethane	25.0	23.5	94.0	10.0-160	
n-Butylbenzene	25.0	21.2	84.8	73.0-125	
sec-Butylbenzene	25.0	21.6	86.4	75.0-125	
tert-Butylbenzene	25.0	22.4	89.6	76.0-124	
Carbon disulfide	25.0	22.0	88.0	61.0-128	
Carbon tetrachloride	25.0	27.9	112	68.0-126	
Chlorobenzene	25.0	20.5	82.0	80.0-121	
Chlorodibromomethane	25.0	19.5	78.0	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.8	91.2	73.0-120	
Chloromethane	25.0	20.5	82.0	41.0-142	
2-Chlorotoluene	25.0	20.6	82.4	76.0-123	
4-Chlorotoluene	25.0	20.6	82.4	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.9	83.6	58.0-134	
1,2-Dibromoethane	25.0	20.3	81.2	80.0-122	
Dibromomethane	25.0	23.6	94.4	80.0-120	
1,2-Dichlorobenzene	25.0	19.9	79.6	79.0-121	<u>JO</u>
1,3-Dichlorobenzene	25.0	19.5	78.0	79.0-120	<u>JO J4</u>
1,4-Dichlorobenzene	25.0	19.7	78.8	79.0-120	<u>JO J4</u>
Dichlorodifluoromethane	25.0	22.8	91.2	51.0-149	
1,1-Dichloroethane	25.0	22.9	91.6	70.0-126	
1,2-Dichloroethane	25.0	21.4	85.6	70.0-128	
1,1-Dichloroethene	25.0	22.8	91.2	71.0-124	
cis-1,2-Dichloroethene	25.0	22.4	89.6	73.0-120	
trans-1,2-Dichloroethene	25.0	21.6	86.4	73.0-120	
1,2-Dichloropropane	25.0	22.1	88.4	77.0-125	
1,1-Dichloropropene	25.0	24.7	98.8	74.0-126	
1,3-Dichloropropane	25.0	19.5	78.0	80.0-120	<u>JO J4</u>
cis-1,3-Dichloropropene	25.0	23.0	92.0	80.0-123	
trans-1,3-Dichloropropene	25.0	20.5	82.0	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.9	71.6	33.0-144	<u>JO</u>
2,2-Dichloropropane	25.0	21.4	85.6	58.0-130	
Di-isopropyl ether	25.0	20.5	82.0	58.0-138	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3464735-1 10/23/19 22:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	25.0	20.6	82.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	23.9	95.6	54.0-138	
2-Hexanone	125	109	87.2	67.0-149	
n-Hexane	25.0	18.7	74.8	57.0-133	<u>JO</u>
Iodomethane	125	112	89.6	33.0-147	
Isopropylbenzene	25.0	21.4	85.6	76.0-127	
p-Isopropyltoluene	25.0	22.6	90.4	76.0-125	
2-Butanone (MEK)	125	114	91.2	44.0-160	
Methylene Chloride	25.0	20.8	83.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	101	80.8	68.0-142	
Methyl tert-butyl ether	25.0	21.8	87.2	68.0-125	
Naphthalene	25.0	20.7	82.8	54.0-135	
n-Propylbenzene	25.0	20.8	83.2	77.0-124	
Styrene	25.0	21.5	86.0	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	20.9	83.6	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	18.2	72.8	65.0-130	<u>JO</u>
1,1,2-Trichlorotrifluoroethane	25.0	20.5	82.0	69.0-132	
Tetrachloroethene	25.0	21.9	87.6	72.0-132	
Toluene	25.0	20.3	81.2	79.0-120	
1,2,3-Trichlorobenzene	25.0	21.2	84.8	50.0-138	
1,2,4-Trichlorobenzene	25.0	20.6	82.4	57.0-137	
1,1,1-Trichloroethane	25.0	26.2	105	73.0-124	
1,1,2-Trichloroethane	25.0	19.2	76.8	80.0-120	<u>JO J4</u>
Trichloroethene	25.0	25.9	104	78.0-124	
Trichlorofluoromethane	25.0	27.8	111	59.0-147	
1,2,3-Trichloropropane	25.0	21.1	84.4	73.0-130	
1,2,4-Trimethylbenzene	25.0	20.0	80.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	20.3	81.2	77.0-120	
1,3,5-Trimethylbenzene	25.0	20.7	82.8	76.0-122	
Vinyl acetate	125	59.9	47.9	11.0-160	<u>JO</u>
Vinyl chloride	25.0	23.6	94.4	67.0-131	
Xylenes, Total	75.0	60.9	81.2	79.0-123	
(S) Toluene-d8			96.8	80.0-120	
(S) 4-Bromofluorobenzene			102	77.0-126	
(S) 1,2-Dichloroethane-d4			109	70.0-130	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3464910-2 10/24/19 18:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	104			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3464910-1 10/24/19 17:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	25.0	22.8	91.2	73.0-120	
Tetrachloroethene	25.0	25.5	102	72.0-132	
Trichloroethene	25.0	25.0	100	78.0-124	
(S) Toluene-d8			111	80.0-120	
(S) 4-Bromofluorobenzene			110	77.0-126	
(S) 1,2-Dichloroethane-d4			109	70.0-130	

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3465284-3 10/25/19 21:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.238	U	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	114			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	94.6	75.7	19.0-160	
Acrylonitrile	125	128	102	55.0-149	
Benzene	25.0	23.6	94.4	70.0-123	
Bromobenzene	25.0	20.2	80.8	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	27.5	110	76.0-122	
Bromoform	25.0	30.8	123	68.0-132	
Bromomethane	25.0	26.6	106	10.0-160	
n-Butylbenzene	25.0	22.6	90.4	73.0-125	
sec-Butylbenzene	25.0	22.5	90.0	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.7	94.8	61.0-128	
Carbon tetrachloride	25.0	29.8	119	68.0-126	
Chlorobenzene	25.0	26.6	106	80.0-121	
Chlorodibromomethane	25.0	30.2	121	77.0-125	
Chloroethane	25.0	25.9	104	47.0-150	
Chloroform	25.0	23.2	92.8	73.0-120	
Chloromethane	25.0	21.7	86.8	41.0-142	
2-Chlorotoluene	25.0	21.7	86.8	76.0-123	
4-Chlorotoluene	25.0	21.9	87.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	26.6	106	58.0-134	
1,2-Dibromoethane	25.0	25.7	103	80.0-122	
Dibromomethane	25.0	25.7	103	80.0-120	
1,2-Dichlorobenzene	25.0	26.6	106	79.0-121	
1,3-Dichlorobenzene	25.0	25.6	102	79.0-120	
1,4-Dichlorobenzene	25.0	23.7	94.8	79.0-120	
trans-1,4-Dichloro-2-butene	25.0	18.8	75.2	33.0-144	
Dichlorodifluoromethane	25.0	22.3	89.2	51.0-149	
1,1-Dichloroethane	25.0	24.4	97.6	70.0-126	
1,2-Dichloroethane	25.0	23.8	95.2	70.0-128	
1,1-Dichloroethene	25.0	26.6	106	71.0-124	
cis-1,2-Dichloroethene	25.0	25.5	102	73.0-120	
trans-1,2-Dichloroethene	25.0	25.6	102	73.0-120	
1,2-Dichloropropane	25.0	23.7	94.8	77.0-125	
1,1-Dichloropropene	25.0	25.3	101	74.0-126	
1,3-Dichloropropane	25.0	24.5	98.0	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	25.9	104	78.0-124	
2,2-Dichloropropane	25.0	26.8	107	58.0-130	
Di-isopropyl ether	25.0	25.1	100	58.0-138	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3465284-1 10/25/19 19:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	25.7	103	79.0-123	
Hexachloro-1,3-butadiene	25.0	25.6	102	54.0-138	
2-Hexanone	125	132	106	67.0-149	
n-Hexane	25.0	23.9	95.6	57.0-133	
Iodomethane	125	145	116	33.0-147	
Isopropylbenzene	25.0	28.4	114	76.0-127	
p-Isopropyltoluene	25.0	24.2	96.8	76.0-125	
2-Butanone (MEK)	125	119	95.2	44.0-160	
Methylene Chloride	25.0	23.2	92.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	133	106	68.0-142	
Methyl tert-butyl ether	25.0	26.0	104	68.0-125	
Naphthalene	25.0	25.7	103	54.0-135	
n-Propylbenzene	25.0	22.0	88.0	77.0-124	
Styrene	25.0	28.2	113	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	30.2	121	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.9	83.6	65.0-130	
Tetrachloroethene	25.0	29.2	117	72.0-132	
Toluene	25.0	25.2	101	79.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
1,2,3-Trichlorobenzene	25.0	27.0	108	50.0-138	
1,2,4-Trichlorobenzene	25.0	26.3	105	57.0-137	
1,1,1-Trichloroethane	25.0	28.2	113	73.0-124	
1,1,2-Trichloroethane	25.0	25.8	103	80.0-120	
Trichloroethene	25.0	28.0	112	78.0-124	
Trichlorofluoromethane	25.0	27.9	112	59.0-147	
1,2,3-Trichloropropane	25.0	22.6	90.4	73.0-130	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,2,4-Trimethylbenzene	25.0	22.3	89.2	76.0-121	
1,3,5-Trimethylbenzene	25.0	23.0	92.0	76.0-122	
Vinyl acetate	125	134	107	11.0-160	
Vinyl chloride	25.0	26.1	104	67.0-131	
Xylenes, Total	75.0	80.7	108	79.0-123	
(S) Toluene-d8			112	80.0-120	
(S) 4-Bromofluorobenzene			109	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3465605-3 10/27/19 09:18

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	96.6			80.0-120
(S) 4-Bromofluorobenzene	92.5			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465605-1 10/27/19 08:19 • (LCSD) R3465605-2 10/27/19 08:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	23.1	22.9	92.4	91.6	73.0-120			0.870	20
Vinyl chloride	25.0	29.8	30.8	119	123	67.0-131			3.30	20
(S) Toluene-d8				97.5	92.4	80.0-120				
(S) 4-Bromofluorobenzene				96.1	91.1	77.0-126				
(S) 1,2-Dichloroethane-d4				101	103	70.0-130				

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3465451-2 10/26/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.982	U	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	0.356	U	0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	95.5			80.0-120
(S) 4-Bromofluorobenzene	92.7			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	125	146	117	19.0-160	
Acrylonitrile	125	168	134	55.0-149	
Benzene	25.0	23.8	95.2	70.0-123	
Bromobenzene	25.0	27.7	111	73.0-121	
Bromodichloromethane	25.0	23.4	93.6	75.0-120	
Bromochloromethane	25.0	26.6	106	76.0-122	
Bromoform	25.0	24.6	98.4	68.0-132	
Bromomethane	25.0	16.1	64.4	10.0-160	
n-Butylbenzene	25.0	29.4	118	73.0-125	
sec-Butylbenzene	25.0	26.3	105	75.0-125	
tert-Butylbenzene	25.0	24.7	98.8	76.0-124	
Carbon disulfide	25.0	22.7	90.8	61.0-128	
Carbon tetrachloride	25.0	21.5	86.0	68.0-126	
Chlorobenzene	25.0	24.1	96.4	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	28.4	114	47.0-150	
Chloroform	25.0	22.7	90.8	73.0-120	
Chloromethane	25.0	25.8	103	41.0-142	
2-Chlorotoluene	25.0	26.9	108	76.0-123	
4-Chlorotoluene	25.0	26.6	106	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	25.6	102	58.0-134	
1,2-Dibromoethane	25.0	25.6	102	80.0-122	
Dibromomethane	25.0	26.4	106	80.0-120	
1,2-Dichlorobenzene	25.0	27.8	111	79.0-121	
1,3-Dichlorobenzene	25.0	28.5	114	79.0-120	
1,4-Dichlorobenzene	25.0	27.8	111	79.0-120	
Dichlorodifluoromethane	25.0	22.5	90.0	51.0-149	
1,1-Dichloroethane	25.0	27.6	110	70.0-126	
1,2-Dichloroethane	25.0	28.4	114	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	24.0	96.0	73.0-120	
trans-1,2-Dichloroethene	25.0	22.5	90.0	73.0-120	
1,2-Dichloropropane	25.0	29.5	118	77.0-125	
1,1-Dichloropropene	25.0	24.6	98.4	74.0-126	
1,3-Dichloropropane	25.0	27.0	108	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	26.8	107	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	33.7	135	33.0-144	
2,2-Dichloropropane	25.0	23.0	92.0	58.0-130	
Di-isopropyl ether	25.0	29.5	118	58.0-138	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Laboratory Control Sample (LCS)

(LCS) R3465451-1 10/26/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ethylbenzene	25.0	22.5	90.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	31.4	126	54.0-138	
2-Hexanone	125	172	138	67.0-149	
n-Hexane	25.0	29.8	119	57.0-133	
Iodomethane	125	104	83.2	33.0-147	
Isopropylbenzene	25.0	21.3	85.2	76.0-127	
p-Isopropyltoluene	25.0	27.1	108	76.0-125	
2-Butanone (MEK)	125	139	111	44.0-160	
Methylene Chloride	25.0	22.5	90.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	142	114	68.0-142	
Methyl tert-butyl ether	25.0	25.3	101	68.0-125	
Naphthalene	25.0	23.9	95.6	54.0-135	
n-Propylbenzene	25.0	25.2	101	77.0-124	
Styrene	25.0	23.9	95.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.3	93.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.9	104	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	21.4	85.6	69.0-132	
Tetrachloroethene	25.0	22.9	91.6	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	27.3	109	50.0-138	
1,2,4-Trichlorobenzene	25.0	30.0	120	57.0-137	
1,1,1-Trichloroethane	25.0	21.4	85.6	73.0-124	
1,1,2-Trichloroethane	25.0	24.5	98.0	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	26.9	108	59.0-147	
1,2,3-Trichloropropane	25.0	26.0	104	73.0-130	
1,2,4-Trimethylbenzene	25.0	25.9	104	76.0-121	
1,2,3-Trimethylbenzene	25.0	26.6	106	77.0-120	
1,3,5-Trimethylbenzene	25.0	25.0	100	76.0-122	
Vinyl acetate	125	164	131	11.0-160	
Vinyl chloride	25.0	32.6	130	67.0-131	
Xylenes, Total	75.0	68.0	90.7	79.0-123	
<i>(S) Toluene-d8</i>			93.8	80.0-120	
<i>(S) 4-Bromofluorobenzene</i>			91.0	77.0-126	
<i>(S) 1,2-Dichloroethane-d4</i>			101	70.0-130	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 GI
- 8 AI
- 9 Sc

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.  
 \* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

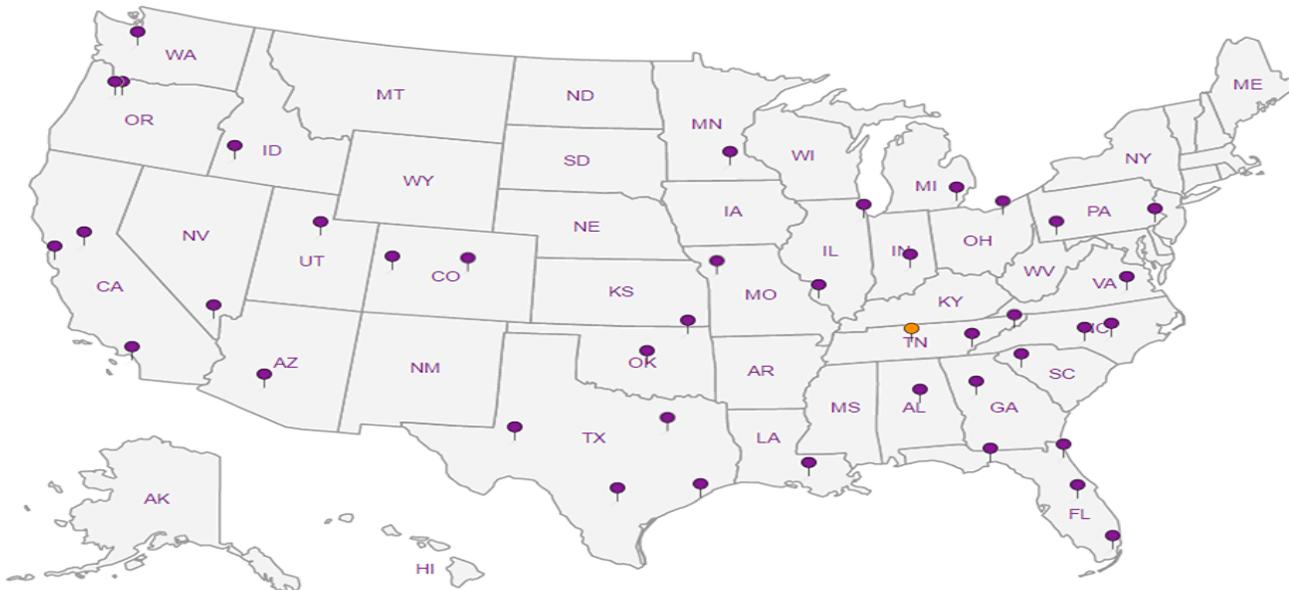
## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

PES-Seattle  
 Billing Information: PES-Seattle  
 Pres Chk  
 Analysis / Container / Preservative  
 Chain of Custody Page 1 of 1  
 Pace Analytical®  
 National Center for Testing & Innovation

Report to: Bill Haldeman/Brian O'neal  
 Email To: on file

Project Description: American Liner  
 City/State: Seattle, WA  
 Collected:

Phone: on file  
 Client Project #: 1413.001.02.501E  
 Lab Project #: PESENVSWA-ALP

Collected by (print): L. Egeas/B. Hecht/H. C. ...  
 Site/Facility ID #: American Liner  
 P.O. #

Collected by (signature): [Signature]  
 Rush? (Lab MUST Be Notified)  
 \_\_\_ Same Day \_\_\_ Five Day  
 \_\_\_ Next Day \_\_\_ 5 Day (Rad Only)  
 \_\_\_ Two Day \_\_\_ 10 Day (Rad Only)  
 \_\_\_ Three Day  
 Quote #  
 Date Results Needed  
 No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)
-----------	-----------	----------	-------	------	------	--------------	----------------------------------	---------	-----------------	------------------	-----	------------	----------------

MW-917-101519	Grab	GW	90	10/15/19	800	9	X	X	X	X	X	X	X
MW109-101519		GW	40		945	9	X	X	X	X	X	X	X
MW-305-101519		GW	30		1010	9	X	X	X	X	X	X	X
MW126-101519		GW	90		1100	9	X	X	X	X	X	X	X
MW-306-101519		GW	50		1140	9	X	X	X	X	X	X	X
W-MW-01-101519		GW	75		1220	9	X	X	X	X	X	X	X
<del>MW-10</del> MW110-101519		GW	40		1420	9	X	X	X	X	X	X	X
MW-153-101519		GW	125		1425	12	X	X	X	X	X	X	X
MW107-101519	↓	GW	40		1400	12	X	X	X	X	X	X	X
TB-101519	—	GW	—	10/15/19	—	1	X	X	X	X	X	X	X

\* Matrix: SS - Soil AIR - Air F - Filter  
 GW - Groundwater B - Bioassay  
 WW - WasteWater  
 DW - Drinking Water  
 OT - Other

Remarks: pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Samples returned via: \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier \_\_\_\_\_  
 Tracking # 1803 5774 6584

Relinquished by: (Signature) [Signature]  
 Date: 10-15-19  
 Time: 16:30  
 Received by: (Signature) [Signature]  
 Trip Blank Received: Yes/No  
 HCL/MeOH TBR

Relinquished by: (Signature) [Signature]  
 Date: [Blank]  
 Time: [Blank]  
 Received by: (Signature) [Signature]  
 Temp: °C  
 Bottles Received: 90

Relinquished by: (Signature) [Signature]  
 Date: 10/16/19  
 Time: 8:30  
 Received for lab by: (Signature) [Signature]  
 Date: [Blank]  
 Time: [Blank]  
 Hold: [Blank]  
 Condition: NCF 10K

12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859



L# L1150336

Tab G091

Acctnum: PESENVSWA

Template:

Prelogin:  
 TSR: Brian Ford  
 PB:

Shipped Via:  
 Remarks Sample # (lab only)

Sample Receipt Checklist

COC Seal Present/Intact:  NP  N  
 COC Signed/Accurate:  N  
 Bottles arrive intact:  N  
 Correct bottles used:  N  
 Sufficient volume sent:  N  
 If Applicable  
 VOA Zero Headpace:  N  
 Preservation Correct/Checked:  N

SCREEN: <0.5 mR/hr

If preservation required by Login: Date/Time



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

**Hart Crowser, Inc.**  
Marissa Goodman  
3131 Elliott Avenue, Suite 600  
Seattle, WA 98121

**RE: 601 Dexter**  
**Work Order Number: 1904223**

May 03, 2019

**Attention Marissa Goodman:**

Fremont Analytical, Inc. received 4 sample(s) on 4/11/2019 for the analyses presented in the following report.

***Helium by GC/TCD***  
***Major Gases by EPA Method 3C***  
***Petroleum Fractionation by EPA Method TO-15***  
***Volatile Organic Compounds by EPA Method TO-15***

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,

Mike Ridgeway  
Laboratory Director

DoD/ELAP Certification #L17-135, ISO/IEC 17025:2005  
ORELAP Certification: WA 100009-007 (NELAP Recognized)

---

**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter  
**Work Order:** 1904223

---

**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1904223-001	CSE-1	04/10/2019 10:11 AM	04/11/2019 4:17 PM
1904223-002	CSW-1	04/10/2019 10:10 AM	04/11/2019 4:17 PM
1904223-003	SV-1	04/09/2019 4:50 PM	04/11/2019 4:17 PM
1904223-004	SV-2	04/10/2019 11:50 AM	04/11/2019 4:17 PM

**CLIENT:** Hart Crowser, Inc.

**Project:** 601 Dexter

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Air samples are reported in ppbv and ug/m3.

Major gases are reported as % ratio of the Major Gases analyzed (Carbon dioxide, Carbon Monoxide, Methane, Nitrogen, Oxygen and Hydrogen).

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 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.

Standard temperature and pressure assumes 24.45 = (25C and 1 atm).

Note: Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. See data results for additional information.

Rev1: Full list VOCs reported.

### 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 (<20%RSD, <20% Drift or minimum RRF)
- 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
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



**CLIENT:** Hart Crowser, Inc.

**Project:** 601 Dexter

**Lab ID:** 1904223-003

**Collection Date:** 4/9/2019 4:50:00 PM

**Client Sample ID:** SV-1

**Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Helium by GC/TCD**

Batch ID: R50823 Analyst: AD

Helium	ND	100		ppt	1	4/18/2019 12:19:00 PM
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**NOTES:**

ppt = parts per thousand

**Major Gases by EPA Method 3C**

Batch ID: R50797 Analyst: AD

Carbon Dioxide	0.124	0.0690	D	%	1.38	4/17/2019 12:59:00 PM
Methane	ND	0.0690	D	%	1.38	4/17/2019 12:59:00 PM
Oxygen	23.8	0.0690	D	%	1.38	4/17/2019 12:59:00 PM

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.38X dilution. Detections of analytes were adjusted accordingly.

**Lab ID:** 1904223-004

**Collection Date:** 4/10/2019 11:50:00 AM

**Client Sample ID:** SV-2

**Matrix:** Air

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

**Helium by GC/TCD**

Batch ID: R50823 Analyst: AD

Helium	ND	100		ppt	1	4/18/2019 12:27:00 PM
--------	----	-----	--	-----	---	-----------------------

**NOTES:**

ppt = parts per thousand

**Major Gases by EPA Method 3C**

Batch ID: R50797 Analyst: AD

Carbon Dioxide	ND	0.0660	D	%	1.32	4/17/2019 2:01:00 PM
Methane	ND	0.0660	D	%	1.32	4/17/2019 2:01:00 PM
Oxygen	24.1	0.0660	D	%	1.32	4/17/2019 2:01:00 PM

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.32X dilution. Detections of analytes were adjusted accordingly.



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Lab ID:** 1904223-001A

**Sample Type:** Summa Canister

**Date Sampled:** 4/10/2019

**Date Received:** 4/11/2019

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
<u>Petroleum Fractionation by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
Aliphatic Hydrocarbon (EC5-8)	34.6	132	7.50	28.5	EPA-TO-15 04/13/2019 AD
Aliphatic Hydrocarbon (EC9-12)	<7.50	<44.2	7.50	44.2	EPA-TO-15 04/13/2019 AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15 04/13/2019 AD
Surr: 4-Bromofluorobenzene	87.8 %Rec	--	70-130	--	EPA-TO-15 04/13/2019 AD

<u>Volatile Organic Compounds by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15 04/16/2019 AD
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15 04/16/2019 AD
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15 04/16/2019 AD
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15 04/16/2019 AD
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	* EPA-TO-15 04/16/2019 AD
1,2,4-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15 04/16/2019 AD
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15 04/16/2019 AD
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15 04/16/2019 AD
1,3,5-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,3-Butadiene	<0.125	<0.277	0.125	0.277	EPA-TO-15 04/16/2019 AD
1,3-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dioxane	<0.100	<0.360	0.100	0.360	* EPA-TO-15 04/16/2019 AD
(MEK) 2-Butanone	0.384	1.13	0.250	0.737	EPA-TO-15 04/16/2019 AD
2-Hexanone	<0.250	<1.02	0.250	1.02	* EPA-TO-15 04/16/2019 AD
Isopropyl Alcohol	0.978	2.40	0.250	0.614	EPA-TO-15 04/16/2019 AD
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15 04/16/2019 AD
Acetone	3.48	8.26	0.250	0.594	EPA-TO-15 04/16/2019 AD
Acrolein	0.553	1.27	0.125	0.287	EPA-TO-15 04/16/2019 AD
Benzene	0.183	0.586	0.0224	0.0715	B EPA-TO-15 04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Lab ID:** 1904223-001A

**Sample Type:** Summa Canister

**Date Sampled:** 4/10/2019

**Date Received:** 4/11/2019

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0745	0.469	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	0.534	1.10	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.183	0.629	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.348	1.72	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	<0.250	<0.901	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.108	0.433	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	<0.200	<0.868	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.298	1.56	0.00319	0.0167	MDL	EPA-TO-15	04/16/2019 AD
n-Hexane	0.492	1.74	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	<0.100	<0.492	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSE-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-001A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	0.305	1.15	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.245	1.38	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	87.5 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
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Petroleum Fractionation by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Aliphatic Hydrocarbon (EC5-8)	48.1	183	7.50	28.5	EPA-TO-15	04/13/2019	AD
Aliphatic Hydrocarbon (EC9-12)	<7.50	<44.2	7.50	44.2	EPA-TO-15	04/13/2019	AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15	04/13/2019	AD
Surr: 4-Bromofluorobenzene	83.9 %Rec	--	70-130	--	EPA-TO-15	04/13/2019	AD

Volatile Organic Compounds by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )				
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15	04/16/2019	AD	
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15	04/16/2019	AD	
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15	04/16/2019	AD	
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15	04/16/2019	AD	
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	*	EPA-TO-15	04/16/2019	AD
1,2,4-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15	04/16/2019	AD	
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15	04/16/2019	AD	
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15	04/16/2019	AD	
1,3,5-Trimethylbenzene	<0.0750	<0.369	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,3-Butadiene	0.411	0.910	0.125	0.277	EPA-TO-15	04/16/2019	AD	
1,3-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dioxane	<0.100	<0.360	0.100	0.360	*	EPA-TO-15	04/16/2019	AD
(MEK) 2-Butanone	0.387	1.14	0.250	0.737	EPA-TO-15	04/16/2019	AD	
2-Hexanone	<0.250	<1.02	0.250	1.02	*	EPA-TO-15	04/16/2019	AD
Isopropyl Alcohol	1.01	2.48	0.250	0.614	EPA-TO-15	04/16/2019	AD	
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15	04/16/2019	AD	
Acetone	3.91	9.29	0.250	0.594	EPA-TO-15	04/16/2019	AD	
Acrolein	0.681	1.56	0.125	0.287	EPA-TO-15	04/16/2019	AD	
Benzene	0.238	0.761	0.0224	0.0715	B	EPA-TO-15	04/16/2019	AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0744	0.468	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	0.569	1.18	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.255	0.878	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.364	1.80	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	0.366	1.32	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.162	0.652	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	<0.200	<0.868	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.297	1.56	0.00319	0.0167	MDL	EPA-TO-15	04/16/2019 AD
n-Hexane	0.910	3.21	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	<0.100	<0.434	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	<0.100	<0.492	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** CSW-1

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-002A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Tetrachloroethene (PCE)	<0.0500	<0.339	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	0.314	1.18	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.273	1.53	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	85.0 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Date Sampled:** 4/9/2019

**Lab ID:** 1904223-003A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
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Petroleum Fractionation by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
Aliphatic Hydrocarbon (EC5-8)	38.0	144	7.50	28.5	EPA-TO-15	04/13/2019	AD
Aliphatic Hydrocarbon (EC9-12)	178	1,050	75.0	442	EPA-TO-15	04/13/2019	AD
Aromatic Hydrocarbon (EC9-10)	38.0	191	6.25	31.4	EPA-TO-15	04/13/2019	AD
Surr: 4-Bromofluorobenzene	93.4 %Rec	--	70-130	--	EPA-TO-15	04/13/2019	AD

Volatile Organic Compounds by EPA Method TO-15

	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )				
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15	04/16/2019	AD	
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15	04/16/2019	AD	
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15	04/16/2019	AD	
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15	04/16/2019	AD	
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	*	EPA-TO-15	04/16/2019	AD
1,2,4-Trimethylbenzene	3.03	14.9	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15	04/16/2019	AD	
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15	04/16/2019	AD	
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15	04/16/2019	AD	
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15	04/16/2019	AD	
1,3,5-Trimethylbenzene	1.96	9.61	0.0750	0.369	EPA-TO-15	04/16/2019	AD	
1,3-Butadiene	0.129	0.285	0.125	0.277	EPA-TO-15	04/16/2019	AD	
1,3-Dichlorobenzene	0.113	0.681	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dichlorobenzene	<0.0750	<0.451	0.0750	0.451	EPA-TO-15	04/16/2019	AD	
1,4-Dioxane	<0.100	<0.360	0.100	0.360	*	EPA-TO-15	04/16/2019	AD
(MEK) 2-Butanone	2.66	7.86	0.250	0.737	EPA-TO-15	04/16/2019	AD	
2-Hexanone	<0.250	<1.02	0.250	1.02	*	EPA-TO-15	04/16/2019	AD
Isopropyl Alcohol	1.80	4.43	0.250	0.614	EPA-TO-15	04/16/2019	AD	
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15	04/16/2019	AD	
Acetone	20.8	49.4	0.250	0.594	EPA-TO-15	04/16/2019	AD	
Acrolein	0.445	1.02	0.125	0.287	EPA-TO-15	04/16/2019	AD	
Benzene	0.908	2.90	0.0224	0.0715	B	EPA-TO-15	04/16/2019	AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Date Sampled:** 4/9/2019

**Lab ID:** 1904223-003A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0912	0.574	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	<0.0500	<0.230	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	0.178	0.871	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	<0.125	<0.258	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	0.116	0.401	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.470	2.33	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	<0.250	<0.901	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	0.220	0.954	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	0.129	0.517	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	0.781	3.39	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.631	3.31	0.0250	0.131		EPA-TO-15	04/16/2019 AD
n-Hexane	0.123	0.434	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	0.339	1.47	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	0.420	2.06	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	1.33	2.29	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	0.113	0.481	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	<0.100	<0.361	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-1

**Date Sampled:** 4/9/2019

**Lab ID:** 1904223-003A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	0.280	1.90	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	<0.100	<0.295	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	2.17	8.18	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	<0.0162	<0.0872	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.312	1.75	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	94.9 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-004A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration	Reporting Limit	Qual	Method	Date/Analyst
<u>Petroleum Fractionation by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
Aliphatic Hydrocarbon (EC5-8)	270	1,030	75.0	285	EPA-TO-15 04/15/2019 AD
Aliphatic Hydrocarbon (EC9-12)	57.8	340	75.0	442	EPA-TO-15 04/15/2019 AD
Aromatic Hydrocarbon (EC9-10)	<6.25	<31.4	6.25	31.4	EPA-TO-15 04/15/2019 AD
Surr: 4-Bromofluorobenzene	87.6 %Rec	--	70-130	--	EPA-TO-15 04/15/2019 AD
<u>Volatile Organic Compounds by EPA Method TO-15</u>					
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )	
1,1,1-Trichloroethane	<0.100	<0.546	0.100	0.546	EPA-TO-15 04/16/2019 AD
1,1,2,2-Tetrachloroethane	<0.0750	<0.515	0.0750	0.515	EPA-TO-15 04/16/2019 AD
CFC-113	<0.100	<0.766	0.100	0.766	EPA-TO-15 04/16/2019 AD
1,1,2-Trichloroethane (TCA)	<0.125	<0.682	0.125	0.682	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,1-Dichloroethene (DCE)	<0.100	<0.397	0.100	0.397	EPA-TO-15 04/16/2019 AD
1,2,4-Trichlorobenzene	<0.0750	<0.557	0.0750	0.557	* EPA-TO-15 04/16/2019 AD
1,2,4-Trimethylbenzene	1.49	7.35	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,2-Dibromoethane (EDB)	<0.0500	<0.384	0.0500	0.384	EPA-TO-15 04/16/2019 AD
1,2-Dichlorobenzene	<0.100	<0.601	0.100	0.601	EPA-TO-15 04/16/2019 AD
1,2-Dichloroethane	<0.0500	<0.202	0.0500	0.202	EPA-TO-15 04/16/2019 AD
1,2-Dichloropropane	<0.125	<0.578	0.125	0.578	EPA-TO-15 04/16/2019 AD
1,3,5-Trimethylbenzene	0.382	1.88	0.0750	0.369	EPA-TO-15 04/16/2019 AD
1,3-Butadiene	0.428	0.946	0.125	0.277	EPA-TO-15 04/16/2019 AD
1,3-Dichlorobenzene	0.297	1.78	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dichlorobenzene	0.329	1.98	0.0750	0.451	EPA-TO-15 04/16/2019 AD
1,4-Dioxane	<0.100	<0.360	0.100	0.360	* EPA-TO-15 04/16/2019 AD
(MEK) 2-Butanone	1.71	5.03	0.250	0.737	EPA-TO-15 04/16/2019 AD
2-Hexanone	<0.250	<1.02	0.250	1.02	* EPA-TO-15 04/16/2019 AD
Isopropyl Alcohol	4.64	11.4	0.250	0.614	EPA-TO-15 04/16/2019 AD
4-Methyl-2-pentanone (MIBK)	<0.250	<1.02	0.250	1.02	EPA-TO-15 04/16/2019 AD
Acetone	34.2	81.3	0.250	0.594	EPA-TO-15 04/16/2019 AD
Acrolein	0.373	0.855	0.125	0.287	EPA-TO-15 04/16/2019 AD
Benzene	0.916	2.93	0.0224	0.0715	B EPA-TO-15 04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-004A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Benzyl chloride	<0.125	<0.647	0.125	0.647		EPA-TO-15	04/16/2019 AD
Dichlorobromomethane	<0.0750	<0.502	0.0750	0.502		EPA-TO-15	04/16/2019 AD
Bromoform	<0.0500	<0.517	0.0500	0.517		EPA-TO-15	04/16/2019 AD
Bromomethane	<0.125	<0.485	0.125	0.485		EPA-TO-15	04/16/2019 AD
Carbon disulfide	<0.375	<1.17	0.375	1.17		EPA-TO-15	04/16/2019 AD
Carbon tetrachloride	0.0815	0.513	0.0164	0.103		EPA-TO-15	04/16/2019 AD
Chlorobenzene	0.0626	0.288	0.0500	0.230		EPA-TO-15	04/16/2019 AD
Dibromochloromethane	<0.125	<1.06	0.125	1.06		EPA-TO-15	04/16/2019 AD
Chloroethane	<0.100	<0.264	0.100	0.264		EPA-TO-15	04/16/2019 AD
Chloroform	<0.0500	<0.244	0.0500	0.244		EPA-TO-15	04/16/2019 AD
Chloromethane	<0.125	<0.258	0.125	0.258		EPA-TO-15	04/16/2019 AD
cis-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
cis-1,3-dichloropropene	<0.100	<0.454	0.100	0.454		EPA-TO-15	04/16/2019 AD
Cyclohexane	1.48	5.08	0.100	0.344		EPA-TO-15	04/16/2019 AD
Dichlorodifluoromethane (CFC-12)	0.428	2.11	0.100	0.495		EPA-TO-15	04/16/2019 AD
Dichlorotetrafluoroethane (CFC-114)	<0.100	<0.699	0.100	0.699		EPA-TO-15	04/16/2019 AD
Ethyl acetate	1.16	4.17	0.250	0.901		EPA-TO-15	04/16/2019 AD
Ethylbenzene	0.386	1.67	0.100	0.434		EPA-TO-15	04/16/2019 AD
Heptane	1.72	6.90	0.100	0.402		EPA-TO-15	04/16/2019 AD
Hexachlorobutadiene	<0.250	<2.67	0.250	2.67		EPA-TO-15	04/16/2019 AD
m,p-Xylene	1.60	6.93	0.200	0.868		EPA-TO-15	04/16/2019 AD
Methyl methacrylate	<0.100	<0.409	0.100	0.409		EPA-TO-15	04/16/2019 AD
Methylene chloride	<0.500	<1.74	0.500	1.74	*	EPA-TO-15	04/16/2019 AD
Naphthalene	0.528	2.77	0.0250	0.131		EPA-TO-15	04/16/2019 AD
n-Hexane	3.56	12.6	0.100	0.352		EPA-TO-15	04/16/2019 AD
o-Xylene	0.565	2.45	0.100	0.434		EPA-TO-15	04/16/2019 AD
4-Ethyltoluene	0.429	2.11	0.100	0.492		EPA-TO-15	04/16/2019 AD
Propylene	<0.100	<0.172	0.100	0.172		EPA-TO-15	04/16/2019 AD
Styrene	<0.100	<0.426	0.100	0.426		EPA-TO-15	04/16/2019 AD
Methyl tert-butyl ether (MTBE)	0.284	1.02	0.100	0.361		EPA-TO-15	04/16/2019 AD



**Client:** Hart Crowser, Inc.

**WorkOrder:** 1904223

**Project:** 601 Dexter

**Client Sample ID:** SV-2

**Date Sampled:** 4/10/2019

**Lab ID:** 1904223-004A

**Date Received:** 4/11/2019

**Sample Type:** Summa Canister

Analyte	Concentration		Reporting Limit		Qual	Method	Date/Analyst
	(ppbv)	(ug/m <sup>3</sup> )	(ppbv)	(ug/m <sup>3</sup> )			
<u>Volatile Organic Compounds by EPA Method TO-15</u>							
Tetrachloroethene (PCE)	0.160	1.09	0.0500	0.339		EPA-TO-15	04/16/2019 AD
Tetrahydrofuran	0.173	0.511	0.100	0.295		EPA-TO-15	04/16/2019 AD
Toluene	1.92	7.25	0.100	0.377		EPA-TO-15	04/16/2019 AD
trans-1,2-Dichloroethene	<0.0500	<0.198	0.0500	0.198		EPA-TO-15	04/16/2019 AD
trans-1,3-dichloropropene	<0.125	<0.567	0.125	0.567		EPA-TO-15	04/16/2019 AD
Trichloroethene (TCE)	0.0425	0.228	0.0162	0.0872		EPA-TO-15	04/16/2019 AD
Trichlorofluoromethane (CFC-11)	0.291	1.63	0.100	0.562		EPA-TO-15	04/16/2019 AD
Vinyl acetate	<0.250	<0.880	0.250	0.880		EPA-TO-15	04/16/2019 AD
Vinyl chloride	<0.0268	<0.0685	0.0268	0.0685		EPA-TO-15	04/16/2019 AD
Surr: 4-Bromofluorobenzene	92.3 %Rec	--	70-130	--		EPA-TO-15	04/16/2019 AD

**NOTES:**

\* - Flagged value is not within established control limits.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742A</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996885</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	12.4	7.50	12.00	0	103	70	130				
Aliphatic Hydrocarbon (EC9-12)	11.9	7.50	12.00	0	98.9	70	130				
Aromatic Hydrocarbon (EC9-10)	9.35	6.25	10.00	0	93.5	70	130				
Surr: 4-Bromofluorobenzene	4.04		4.000		101	70	130				

Sample ID <b>MB-R50742A</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996886</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	ND	7.50									
Aliphatic Hydrocarbon (EC9-12)	ND	7.50									
Aromatic Hydrocarbon (EC9-10)	ND	6.25									
Surr: 4-Bromofluorobenzene	3.26		4.000		81.5	70	130				

Sample ID <b>1904223-001AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>	Prep Date: <b>4/13/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>CSE-1</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/13/2019</b>	SeqNo: <b>996888</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	37.7	7.50						34.59	8.56	30	
Aliphatic Hydrocarbon (EC9-12)	ND	7.50						0		30	
Aromatic Hydrocarbon (EC9-10)	ND	6.25						0		30	
Surr: 4-Bromofluorobenzene	3.49		4.000		87.3	70	130		0		

Sample ID <b>LCS-R50742B</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996892</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	13.4	7.50	12.00	0	112	70	130				
Aliphatic Hydrocarbon (EC9-12)	12.9	7.50	12.00	0	108	70	130				

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742B</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996892</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aromatic Hydrocarbon (EC9-10)	9.48	6.25	10.00	0	94.8	70	130				
Surr: 4-Bromofluorobenzene	4.14		4.000		104	70	130				

Sample ID <b>MB-R50742B</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996893</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	ND	7.50									
Aliphatic Hydrocarbon (EC9-12)	ND	7.50									
Aromatic Hydrocarbon (EC9-10)	ND	6.25									
Surr: 4-Bromofluorobenzene	3.18		4.000		79.4	70	130				

Sample ID <b>1904223-004AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>			Prep Date: <b>4/15/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>SV-2</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/15/2019</b>	SeqNo: <b>996897</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	135	7.50						129.8	4.03	30	E
Aliphatic Hydrocarbon (EC9-12)	229	7.50						231.6	1.03	30	E
Aromatic Hydrocarbon (EC9-10)	6.29	6.25						6.199	1.49	30	
Surr: 4-Bromofluorobenzene	3.51		4.000		87.8	70	130		0		

**NOTES:**

E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID <b>LCS-R50742C</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>			Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>				Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998547</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)	14.5	7.50	12.00	0	121	70	130				
Aliphatic Hydrocarbon (EC9-12)	12.2	7.50	12.00	0	101	70	130				
Aromatic Hydrocarbon (EC9-10)	10.3	6.25	10.00	0	103	70	130				

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Petroleum Fractionation by EPA Method TO-15**

Sample ID <b>LCS-R50742C</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998547</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Bromofluorobenzene      3.86      4.000      96.5      70      130

Sample ID <b>MB-R50742C</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>	Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998548</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)      ND      7.50  
 Aliphatic Hydrocarbon (EC9-12)      ND      7.50  
 Aromatic Hydrocarbon (EC9-10)      ND      6.25  
 Surr: 4-Bromofluorobenzene      3.62      4.000      90.5      70      130

Sample ID <b>1904262-001AREP</b>	SampType: <b>REP</b>	Units: <b>ppbv</b>	Prep Date: <b>4/17/2019</b>	RunNo: <b>50742</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R50742</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998552</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (EC5-8)      735      7.50      732.9      0.265      30      E  
 Aliphatic Hydrocarbon (EC9-12)      2,540      7.50      2,514      0.849      30      E  
 Aromatic Hydrocarbon (EC9-10)      7.36      6.25      7.280      1.14      30  
 Surr: 4-Bromofluorobenzene      3.92      4.000      98.1      70      130      0

**NOTES:**  
 E - Estimated value. The amount exceeds the linear working range of the instrument.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Helium by GC/TCD**

Sample ID <b>LCS-R50823</b>	SampType: <b>LCS</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50823</b>	Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998791</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	100	100	100.0	0	100	80	120
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**NOTES:**  
 ppt = parts per thousand

Sample ID <b>MB-R50823</b>	SampType: <b>MBLK</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50823</b>	Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998792</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	ND	100
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**NOTES:**  
 ppt = parts per thousand

Sample ID <b>1904223-03AREP</b>	SampType: <b>REP</b>	Units: <b>ppt</b>	Prep Date: <b>4/18/2019</b>	RunNo: <b>50823</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R50823</b>	Analysis Date: <b>4/18/2019</b>	SeqNo: <b>998789</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Helium	ND	100				0				30
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**NOTES:**  
 ppt = parts per thousand

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Major Gases by EPA Method 3C**

Sample ID: <b>LCS-R50797</b>	SampType: <b>LCS</b>	Units: %	Prep Date: <b>4/17/2019</b>	RunNo: <b>50797</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R50797</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998276</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon Dioxide	100	0.0500	100.0	0	100	70	130				
Methane	100	0.0500	100.0	0	100	70	130				
Oxygen	100	0.0500	100.0	0	100	70	130				

Sample ID: <b>1904223-001AREP</b>	SampType: <b>REP</b>	Units: %	Prep Date: <b>4/17/2019</b>	RunNo: <b>50797</b>							
Client ID: <b>CSE-1</b>	Batch ID: <b>R50797</b>		Analysis Date: <b>4/17/2019</b>	SeqNo: <b>998272</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon Dioxide	0.108	0.0865						0.09276	15.0	30	D
Methane	ND	0.0865						0		30	D
Oxygen	24.6	0.0865						24.68	0.219	30	D

**NOTES:**

Canister was pressurized with Nitrogen to obtain sample volume required to analyze Major Gases. The added nitrogen resulted in a 1.73X dilution. Detections of analytes were adjusted accordingly.

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID: <b>LCS-R50768</b>	SampType: <b>LCS</b>	Units: <b>ppbv</b>	Prep Date: <b>4/16/2019</b>	RunNo: <b>50768</b>
Client ID: <b>LCSW</b>	Batch ID: <b>R50768</b>		Analysis Date: <b>4/16/2019</b>	SeqNo: <b>997502</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Propylene	2.19	0.400	2.000	0	109	70	130				
Dichlorodifluoromethane (CFC-12)	2.15	0.400	2.000	0	108	70	130				
Chloromethane	2.18	0.500	2.000	0	109	70	130				
Dichlorotetrafluoroethane (CFC-114)	2.09	0.400	2.000	0	104	70	130				
Vinyl chloride	2.09	0.107	2.000	0	105	70	130				
1,3-Butadiene	1.90	0.500	2.000	0	94.8	70	130				
Bromomethane	2.01	0.500	2.000	0	101	70	130				
Trichlorofluoromethane (CFC-11)	2.11	0.400	2.000	0	106	70	130				
Chloroethane	1.95	0.400	2.000	0	97.5	70	130				
Acrolein	1.56	0.500	2.000	0	77.9	70	130				
1,1-Dichloroethene (DCE)	1.91	0.400	2.000	0	95.7	70	130				
Acetone	2.13	1.00	2.000	0	106	70	130				
Isopropyl Alcohol	2.27	1.00	2.000	0	114	70	130				
Methylene chloride	0.451	2.00	2.000	0	22.6	70	130				S
Carbon disulfide	2.00	1.50	2.000	0	99.9	70	130				
trans-1,2-Dichloroethene	2.19	0.200	2.000	0	109	70	130				
Methyl tert-butyl ether (MTBE)	2.36	0.400	2.000	0	118	70	130				
n-Hexane	1.76	0.400	2.000	0	88.1	70	130				
1,1-Dichloroethane	2.04	0.200	2.000	0	102	70	130				
Vinyl acetate	2.31	1.00	2.000	0	116	70	130				
cis-1,2-Dichloroethene	1.82	0.200	2.000	0	90.8	70	130				
(MEK) 2-Butanone	2.30	1.00	2.000	0	115	70	130				
Ethyl acetate	1.74	1.00	2.000	0	87.1	70	130				
Chloroform	2.09	0.200	2.000	0	104	70	130				
Tetrahydrofuran	1.80	0.400	2.000	0	90.1	70	130				
1,1,1-Trichloroethane	1.97	0.400	2.000	0	98.5	70	130				
Carbon tetrachloride	1.94	0.0657	2.000	0	97.0	70	130				
1,2-Dichloroethane	2.02	0.200	2.000	0	101	70	130				
Benzene	1.87	0.0895	2.000	0	93.6	70	130				
Cyclohexane	1.85	0.400	2.000	0	92.3	70	130				
Trichloroethene (TCE)	1.98	0.0649	2.000	0	99.2	70	130				

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	LCS-R50768	SampType:	LCS	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768		
Client ID:	LCSW	Batch ID:	R50768	Analysis Date:	4/16/2019	SeqNo:	997502				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	2.04	0.500	2.000	0	102	70	130				
Methyl methacrylate	1.87	0.400	2.000	0	93.4	70	130				
Dichlorobromomethane	2.08	0.300	2.000	0	104	70	130				
1,4-Dioxane	1.27	0.400	2.000	0	63.4	70	130				S
cis-1,3-dichloropropene	1.69	0.400	2.000	0	84.6	70	130				
Toluene	1.64	0.400	2.000	0	82.2	70	130				
trans-1,3-dichloropropene	1.90	0.500	2.000	0	95.0	70	130				
1,1,2-Trichloroethane (TCA)	2.00	0.500	2.000	0	100	70	130				
Tetrachloroethene (PCE)	2.01	0.200	2.000	0	101	70	130				
Dibromochloromethane	1.90	0.500	2.000	0	94.9	70	130				
1,2-Dibromoethane (EDB)	1.90	0.200	2.000	0	95.2	70	130				
Chlorobenzene	1.95	0.200	2.000	0	97.5	70	130				
Ethylbenzene	1.68	0.400	2.000	0	84.0	70	130				
m,p-Xylene	3.33	0.800	4.000	0	83.2	70	130				
o-Xylene	1.68	0.400	2.000	0	83.8	70	130				
Styrene	1.63	0.400	2.000	0	81.3	70	130				
Bromoform	1.89	0.200	2.000	0	94.3	70	130				
1,1,1,2-Tetrachloroethane	1.92	0.300	2.000	0	95.8	70	130				
1,3,5-Trimethylbenzene	1.69	0.300	2.000	0	84.7	70	130				
1,2,4-Trimethylbenzene	1.54	0.300	2.000	0	76.9	70	130				
Benzyl chloride	1.53	0.500	2.000	0	76.5	70	130				
4-Ethyltoluene	1.64	0.400	2.000	0	82.1	70	130				
1,3-Dichlorobenzene	1.79	0.300	2.000	0	89.4	70	130				
1,4-Dichlorobenzene	1.73	0.300	2.000	0	86.5	70	130				
1,2-Dichlorobenzene	1.82	0.400	2.000	0	90.9	70	130				
1,2,4-Trichlorobenzene	1.36	0.300	2.000	0	67.9	70	130				S
Hexachlorobutadiene	1.73	1.00	2.000	0	86.4	70	130				
Naphthalene	1.63	0.100	2.000	0	81.5	70	130				
2-Hexanone	1.10	1.00	2.000	0	55.0	70	130				S
4-Methyl-2-pentanone (MIBK)	1.53	1.00	2.000	0	76.6	70	130				
CFC-113	1.98	0.400	2.000	0	99.1	70	130				

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	<b>LCS-R50768</b>	SampType:	<b>LCS</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997502</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Heptane	1.77	0.400	2.000	0	88.6	70	130				
Surr: 4-Bromofluorobenzene	4.26		4.000		106	70	130				

**NOTES:**

S - Outlying spike recovery observed (low bias). Samples will be qualified with a \*.

Sample ID	<b>LCS-D-R50768</b>	SampType:	<b>LCS-D</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW02</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997503</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Propylene	2.23	0.400	2.000	0	112	70	130	2.188	2.05	30	
Dichlorodifluoromethane (CFC-12)	2.19	0.400	2.000	0	109	70	130	2.152	1.61	30	
Chloromethane	2.19	0.500	2.000	0	109	70	130	2.175	0.600	30	
Dichlorotetrafluoroethane (CFC-114)	2.13	0.400	2.000	0	107	70	130	2.087	2.18	30	
Vinyl chloride	2.08	0.107	2.000	0	104	70	130	2.093	0.817	30	
1,3-Butadiene	1.87	0.500	2.000	0	93.5	70	130	1.896	1.35	30	
Bromomethane	1.99	0.500	2.000	0	99.3	70	130	2.010	1.24	30	
Trichlorofluoromethane (CFC-11)	2.09	0.400	2.000	0	105	70	130	2.112	0.862	30	
Chloroethane	2.05	0.400	2.000	0	102	70	130	1.949	4.95	30	
Acrolein	1.58	0.500	2.000	0	79.0	70	130	1.558	1.41	30	
1,1-Dichloroethene (DCE)	1.94	0.400	2.000	0	96.8	70	130	1.915	1.12	30	
Acetone	2.14	1.00	2.000	0	107	70	130	2.130	0.624	30	
Isopropyl Alcohol	2.34	1.00	2.000	0	117	70	130	2.271	3.12	30	
Methylene chloride	0.677	2.00	2.000	0	33.8	70	130	0		30	S
Carbon disulfide	1.99	1.50	2.000	0	99.3	70	130	1.998	0.582	30	
trans-1,2-Dichloroethene	2.14	0.200	2.000	0	107	70	130	2.189	2.30	30	
Methyl tert-butyl ether (MTBE)	2.34	0.400	2.000	0	117	70	130	2.362	1.09	30	
n-Hexane	1.78	0.400	2.000	0	88.9	70	130	1.762	0.964	30	
1,1-Dichloroethane	2.04	0.200	2.000	0	102	70	130	2.042	0.334	30	
Vinyl acetate	2.29	1.00	2.000	0	115	70	130	2.314	0.853	30	
cis-1,2-Dichloroethene	1.79	0.200	2.000	0	89.6	70	130	1.817	1.41	30	
(MEK) 2-Butanone	2.30	1.00	2.000	0	115	70	130	2.301	0.206	30	

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	LCSD-R50768	SampType:	LCSD	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768		
Client ID:	LCSW02	Batch ID:	R50768	Analysis Date:	4/16/2019	SeqNo:	997503				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethyl acetate	1.74	1.00	2.000	0	87.2	70	130	1.741	0.186	30	
Chloroform	2.08	0.200	2.000	0	104	70	130	2.086	0.0806	30	
Tetrahydrofuran	1.87	0.400	2.000	0	93.3	70	130	1.802	3.43	30	
1,1,1-Trichloroethane	1.96	0.400	2.000	0	97.9	70	130	1.970	0.653	30	
Carbon tetrachloride	1.91	0.0657	2.000	0	95.3	70	130	1.939	1.67	30	
1,2-Dichloroethane	2.00	0.200	2.000	0	100	70	130	2.020	1.03	30	
Benzene	1.90	0.0895	2.000	0	95.1	70	130	1.872	1.63	30	
Cyclohexane	1.84	0.400	2.000	0	92.1	70	130	1.845	0.147	30	
Trichloroethene (TCE)	2.00	0.0649	2.000	0	100	70	130	1.984	1.05	30	
1,2-Dichloropropane	2.01	0.500	2.000	0	101	70	130	2.041	1.41	30	
Methyl methacrylate	1.90	0.400	2.000	0	94.9	70	130	1.868	1.53	30	
Dichlorobromomethane	2.05	0.300	2.000	0	103	70	130	2.080	1.30	30	
1,4-Dioxane	1.25	0.400	2.000	0	62.7	70	130	1.267	0.991	30	S
cis-1,3-dichloropropene	1.65	0.400	2.000	0	82.7	70	130	1.692	2.31	30	
Toluene	1.65	0.400	2.000	0	82.3	70	130	1.644	0.156	30	
trans-1,3-dichloropropene	1.90	0.500	2.000	0	94.9	70	130	1.899	0.0996	30	
1,1,2-Trichloroethane (TCA)	1.98	0.500	2.000	0	99.0	70	130	2.004	1.26	30	
Tetrachloroethene (PCE)	2.01	0.200	2.000	0	100	70	130	2.015	0.467	30	
Dibromochloromethane	1.89	0.500	2.000	0	94.5	70	130	1.897	0.385	30	
1,2-Dibromoethane (EDB)	1.85	0.200	2.000	0	92.5	70	130	1.905	2.90	30	
Chlorobenzene	1.93	0.200	2.000	0	96.7	70	130	1.951	0.893	30	
Ethylbenzene	1.70	0.400	2.000	0	85.0	70	130	1.680	1.24	30	
m,p-Xylene	3.33	0.800	4.000	0	83.2	70	130	3.328	0.0409	30	
o-Xylene	1.68	0.400	2.000	0	84.1	70	130	1.676	0.388	30	
Styrene	1.63	0.400	2.000	0	81.4	70	130	1.626	0.192	30	
Bromoform	1.86	0.200	2.000	0	92.8	70	130	1.886	1.64	30	
1,1,2,2-Tetrachloroethane	1.90	0.300	2.000	0	95.0	70	130	1.917	0.933	30	
1,3,5-Trimethylbenzene	1.71	0.300	2.000	0	85.4	70	130	1.694	0.868	30	
1,2,4-Trimethylbenzene	1.52	0.300	2.000	0	75.9	70	130	1.538	1.35	30	
Benzyl chloride	1.52	0.500	2.000	0	75.9	70	130	1.530	0.843	30	
4-Ethyltoluene	1.63	0.400	2.000	0	81.3	70	130	1.641	0.880	30	

Work Order: 1904223  
 CLIENT: Hart Crowser, Inc.  
 Project: 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	<b>LCS-D-R50768</b>	SampType:	<b>LCS-D</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>LCSW02</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997503</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	1.74	0.300	2.000	0	87.1	70	130	1.788	2.63	30	
1,4-Dichlorobenzene	1.69	0.300	2.000	0	84.3	70	130	1.730	2.57	30	
1,2-Dichlorobenzene	1.77	0.400	2.000	0	88.5	70	130	1.818	2.68	30	
1,2,4-Trichlorobenzene	1.27	0.300	2.000	0	63.5	70	130	1.358	6.77	30	S
Hexachlorobutadiene	1.66	1.00	2.000	0	82.9	70	130	1.728	4.19	30	
Naphthalene	1.55	0.100	2.000	0	77.3	70	130	1.629	5.20	30	
2-Hexanone	1.12	1.00	2.000	0	56.2	70	130	1.100	2.24	30	S
4-Methyl-2-pentanone (MIBK)	1.48	1.00	2.000	0	74.2	70	130	1.531	3.09	30	
CFC-113	1.99	0.400	2.000	0	99.4	70	130	1.981	0.361	30	
Heptane	1.79	0.400	2.000	0	89.7	70	130	1.772	1.21	30	
Surr: 4-Bromofluorobenzene	4.15		4.000		104	70	130		0		

**NOTES:**

S - Outlying spike recovery observed (low bias). Samples will be qualified with a \*.

Sample ID	<b>MB-R50768</b>	SampType:	<b>MBLK</b>	Units:	<b>ppbv</b>	Prep Date:	<b>4/16/2019</b>	RunNo:	<b>50768</b>		
Client ID:	<b>MBLKW</b>	Batch ID:	<b>R50768</b>			Analysis Date:	<b>4/16/2019</b>	SeqNo:	<b>997504</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Propylene	ND	0.100									
Dichlorodifluoromethane (CFC-12)	ND	0.100									
Chloromethane	ND	0.125									
Dichlorotetrafluoroethane (CFC-114)	ND	0.100									
Vinyl chloride	ND	0.0268									
1,3-Butadiene	ND	0.125									
Bromomethane	ND	0.125									
Trichlorofluoromethane (CFC-11)	ND	0.100									
Chloroethane	ND	0.100									
Acrolein	ND	0.125									
1,1-Dichloroethene (DCE)	ND	0.100									
Acetone	ND	0.250									
Isopropyl Alcohol	ND	0.250									

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID: <b>MB-R50768</b>	SampType: <b>MBLK</b>	Units: <b>ppbv</b>	Prep Date: <b>4/16/2019</b>	RunNo: <b>50768</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R50768</b>		Analysis Date: <b>4/16/2019</b>	SeqNo: <b>997504</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Methylene chloride	ND	0.500									*
Carbon disulfide	ND	0.375									
trans-1,2-Dichloroethene	ND	0.0500									
Methyl tert-butyl ether (MTBE)	ND	0.100									
n-Hexane	ND	0.100									
1,1-Dichloroethane	ND	0.0500									
Vinyl acetate	ND	0.250									
cis-1,2-Dichloroethene	ND	0.0500									
(MEK) 2-Butanone	ND	0.250									
Ethyl acetate	ND	0.250									
Chloroform	ND	0.0500									
Tetrahydrofuran	ND	0.100									
1,1,1-Trichloroethane	ND	0.100									
Carbon tetrachloride	ND	0.0164									
1,2-Dichloroethane	ND	0.0500									
Benzene	0.0961	0.0224									
Cyclohexane	ND	0.100									
Trichloroethene (TCE)	ND	0.0162									
1,2-Dichloropropane	ND	0.125									
Methyl methacrylate	ND	0.100									
Dichlorobromomethane	ND	0.0750									
1,4-Dioxane	ND	0.100									*
cis-1,3-dichloropropene	ND	0.100									
Toluene	ND	0.100									
trans-1,3-dichloropropene	ND	0.125									
1,1,2-Trichloroethane (TCA)	ND	0.125									
Tetrachloroethene (PCE)	ND	0.0500									
Dibromochloromethane	ND	0.125									
1,2-Dibromoethane (EDB)	ND	0.0500									
Chlorobenzene	ND	0.0500									
Ethylbenzene	ND	0.100									

**Work Order:** 1904223  
**CLIENT:** Hart Crowser, Inc.  
**Project:** 601 Dexter

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method TO-15**

Sample ID	MB-R50768	SampType:	MBLK	Units:	ppbv	Prep Date:	4/16/2019	RunNo:	50768
Client ID:	MBLKW	Batch ID:	R50768	Analysis Date:	4/16/2019	SeqNo:	997504		

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.200									
o-Xylene	ND	0.100									
Styrene	ND	0.100									
Bromoform	ND	0.0500									
1,1,1,2-Tetrachloroethane	ND	0.0750									
1,3,5-Trimethylbenzene	ND	0.0750									
1,2,4-Trimethylbenzene	ND	0.0750									
Benzyl chloride	ND	0.125									
4-Ethyltoluene	ND	0.100									
1,3-Dichlorobenzene	ND	0.0750									
1,4-Dichlorobenzene	ND	0.0750									
1,2-Dichlorobenzene	ND	0.100									
1,2,4-Trichlorobenzene	ND	0.0750									*
Hexachlorobutadiene	ND	0.250									
Naphthalene	ND	0.00319									MDL
2-Hexanone	ND	0.250									*
4-Methyl-2-pentanone (MIBK)	ND	0.250									
CFC-113	ND	0.100									
Heptane	ND	0.100									
Surr: 4-Bromofluorobenzene	0.834		1.000		83.4	70	130				

**NOTES:**

\* - Flagged value is not within established control limits.  
 MDL - Analyte reported to Method Detection Limit (MDL)

Client Name: **HART**

 Work Order Number: **1904223**

Logged by:

 Date Received: **4/11/2019 4:17:00 PM**

### Chain of Custody

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

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C \* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

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

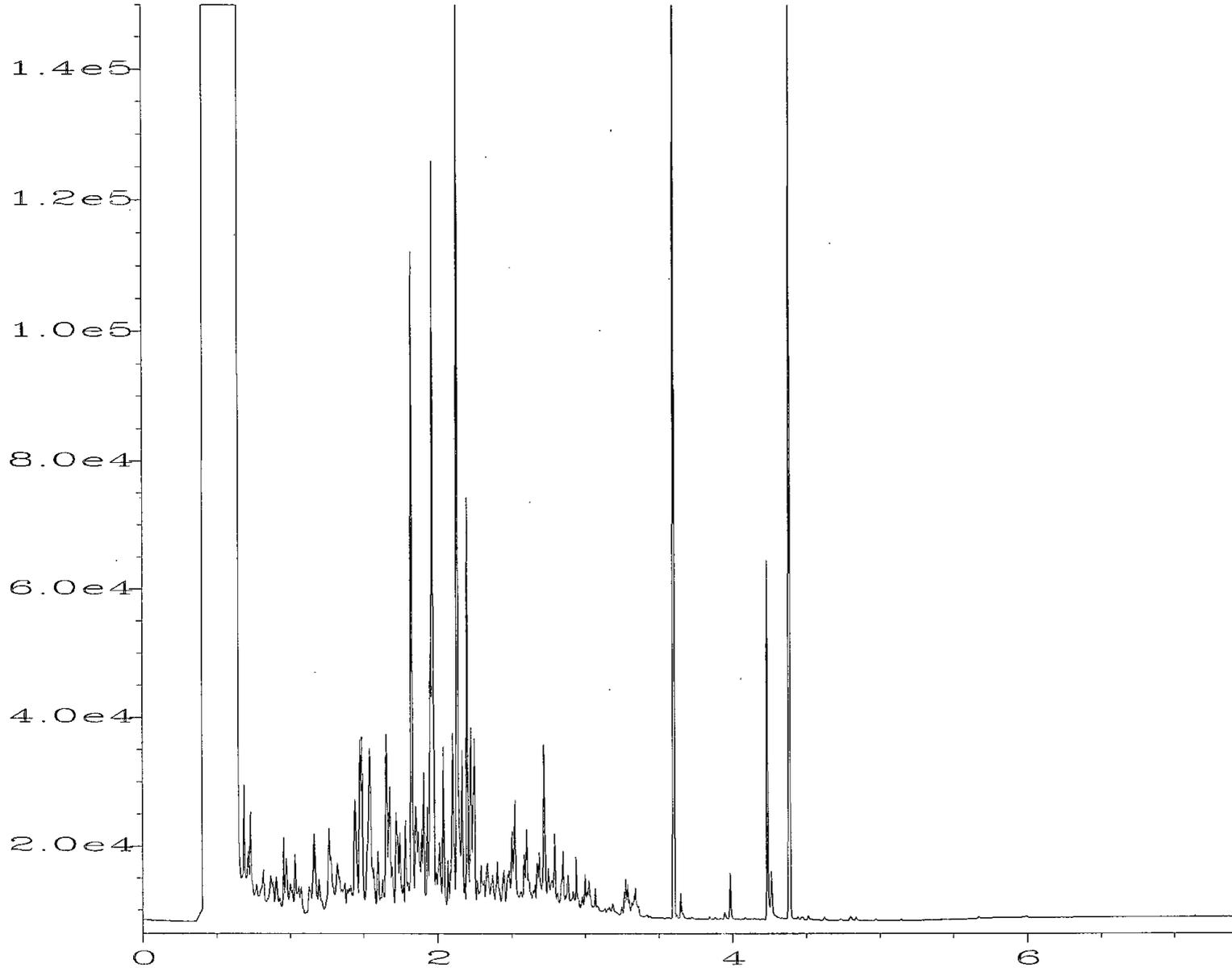




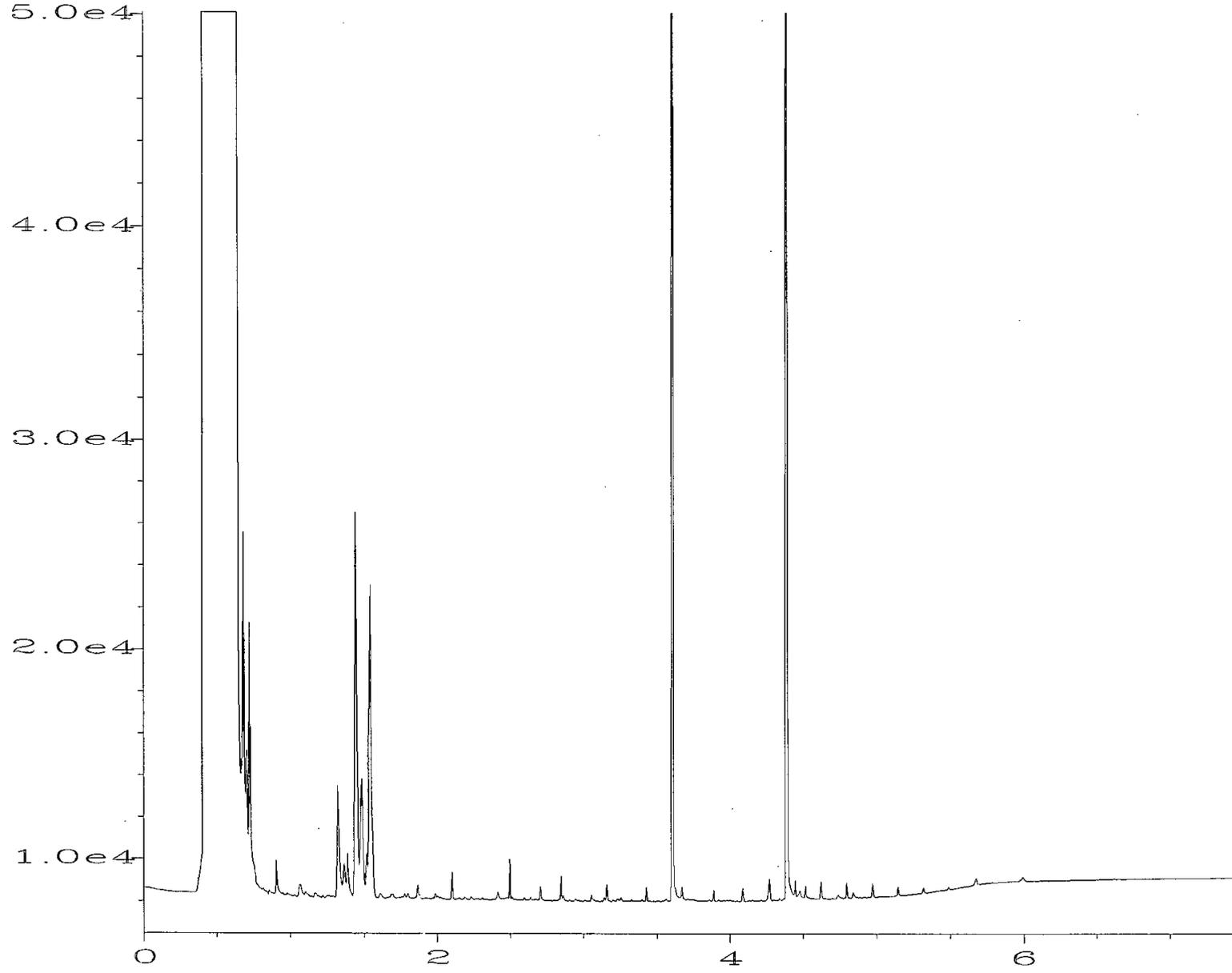
## **APPENDIX C3**

### **Chromatograms for TPH in Select Samples**

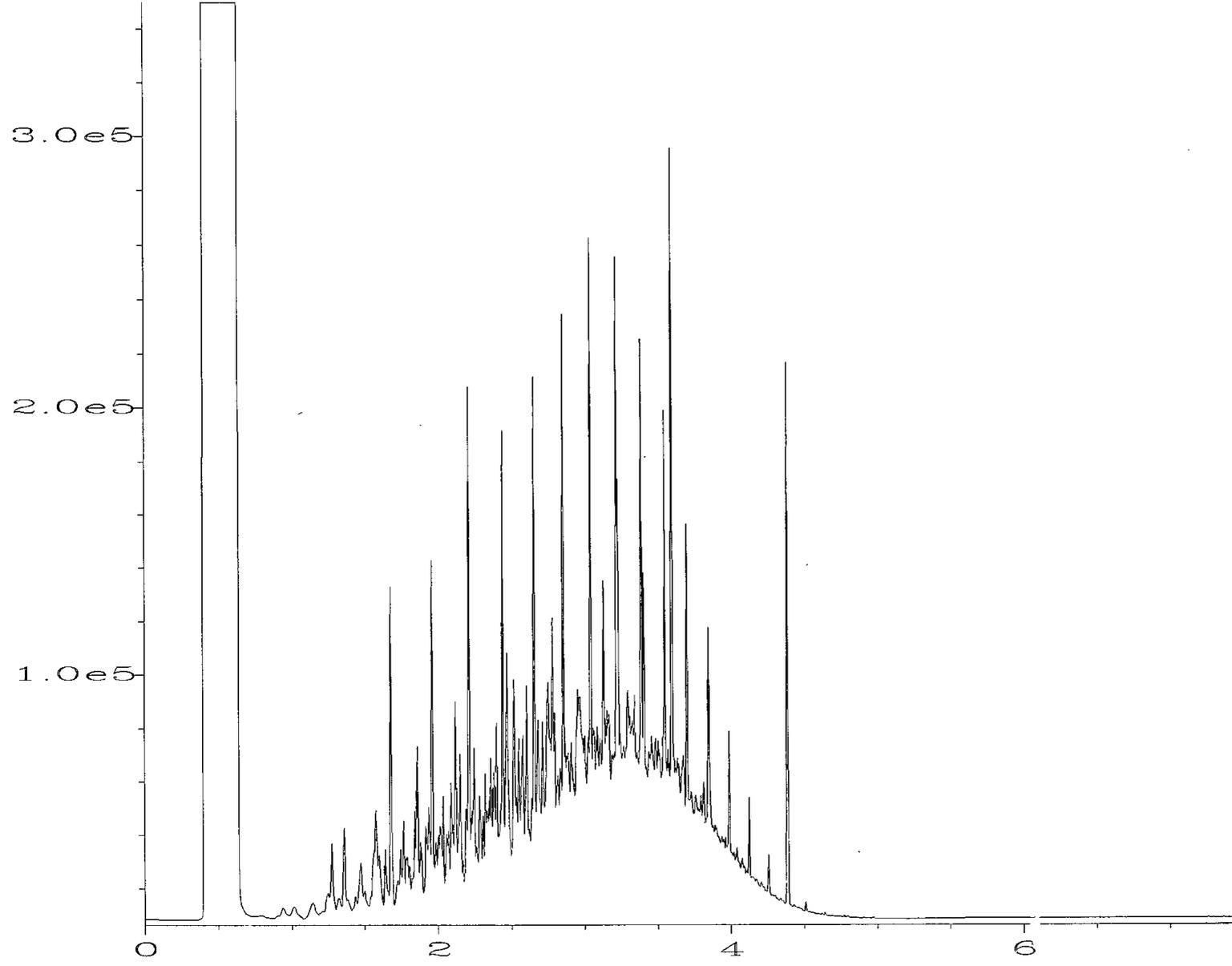
DMW-1S



Data File Name : C:\HPCHEM\1\DATA\03-19-20\016F0601.D  
Operator : TL  
Instrument : GC1  
Sample Name : 003307-01  
Run Time Bar Code :  
Acquired on : 19 Mar 20 01:48 PM  
Report Created on: 15 Oct 20 10:11 AM  
Page Number : 1  
Vial Number : 16  
Injection Number : 1  
Sequence Line : 6  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH

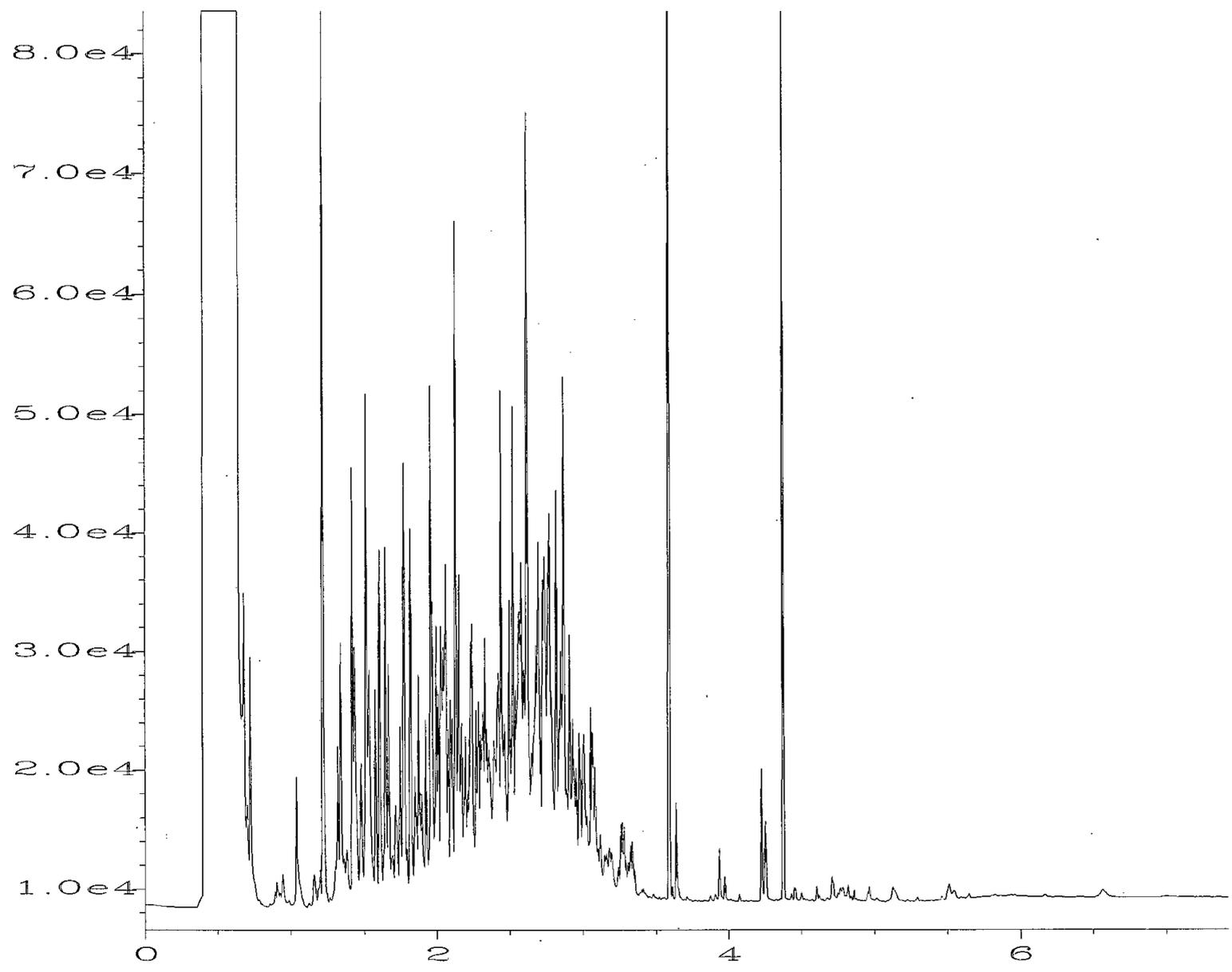


Data File Name : C:\HPCHEM\1\DATA\03-19-20\010F0401.D  
Operator : TL  
Instrument : GC1  
Sample Name : 00-700 mb2  
Run Time Bar Code : 19 Mar 20 11:08 AM  
Acquired on : 15 Oct 20 10:11 AM  
Page Number : 1  
Vial Number : 10  
Injection Number : 1  
Sequence Line : 4  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH  
Report Created on: 15 Oct 20 10:11 AM



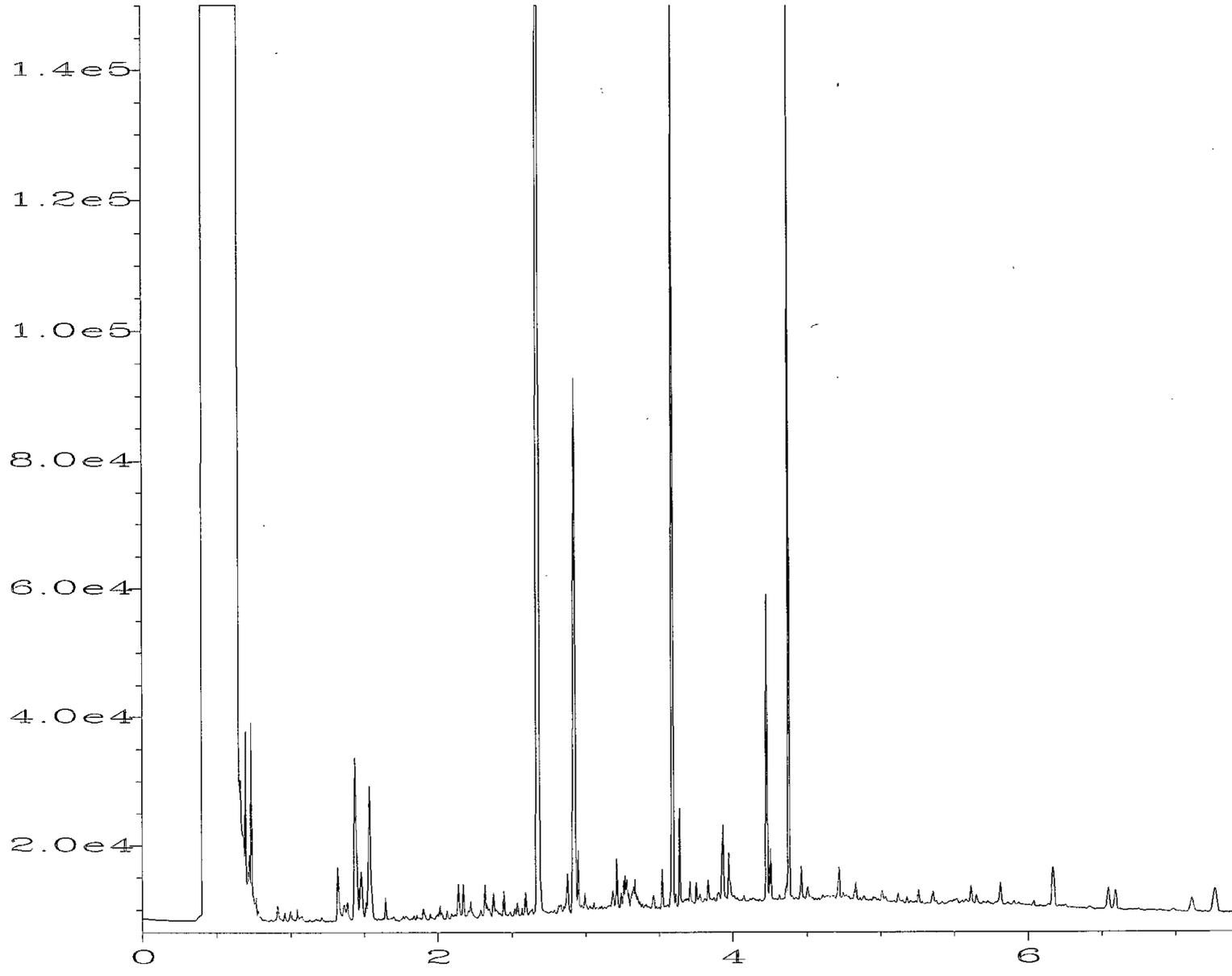
Data File Name : C:\HPCHEM\1\DATA\03-19-20\005F0701.D  
Operator : TL Page Number : 1  
Instrument : GC1 Vial Number : 5  
Sample Name : 1000 Dx 59-162B Injection Number : 1  
Run Time Bar Code : Sequence Line : 7  
Acquired on : 19 Mar 20 03:00 PM Instrument Method: DX.MTH  
Report Created on: 15 Oct 20 10:11 AM Analysis Method : DEFAULT.MTH

DMW-4S

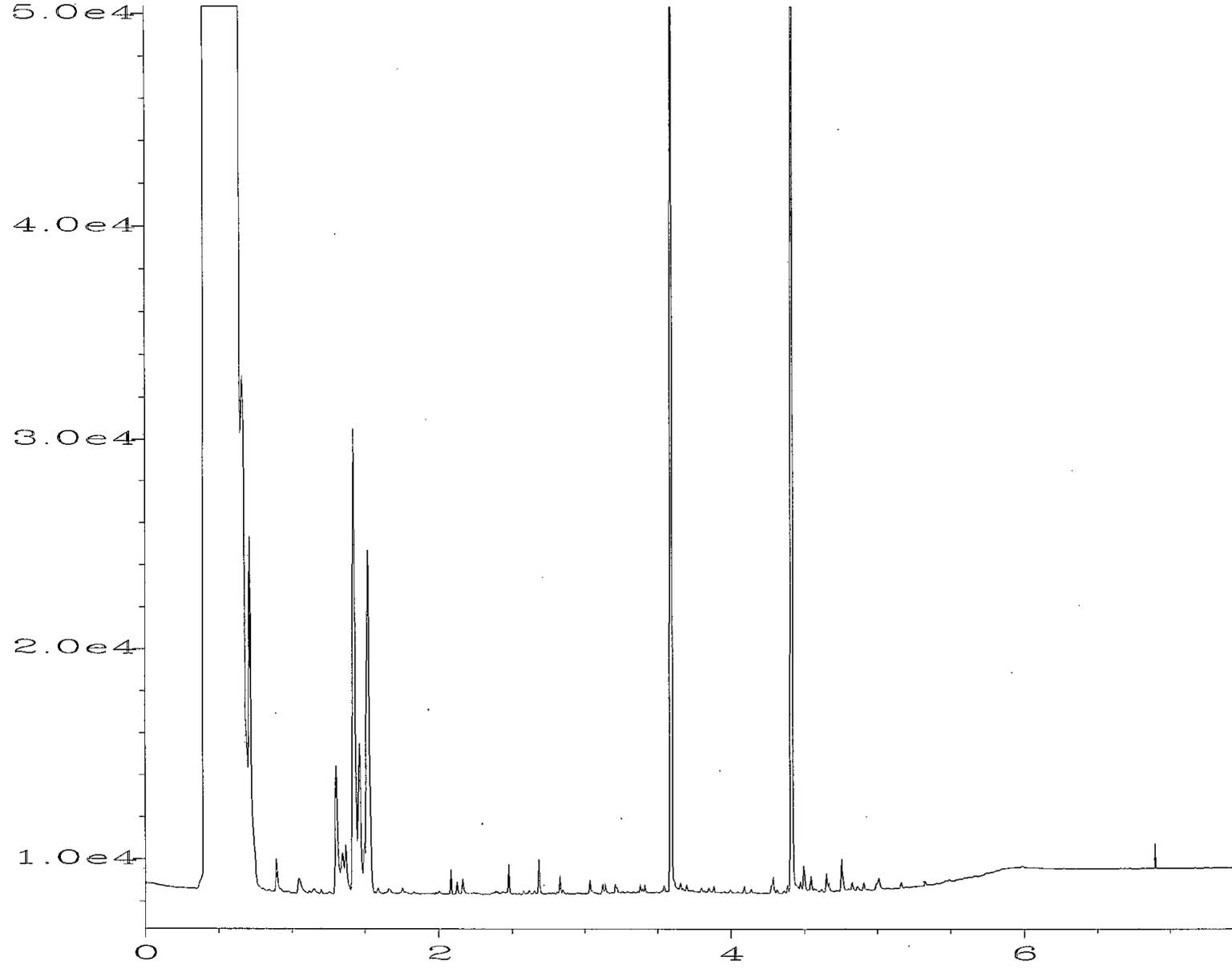


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Operator : TL  
Instrument : GC1  
Sample Name : 003357-04  
Run Time Bar Code :  
Acquired on : 23 Mar 20 12:18 PM  
Report Created on: 15 Oct 20 10:14 AM  
Page Number : 1  
Vial Number : 13  
Injection Number : 1  
Sequence Line : 3  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH

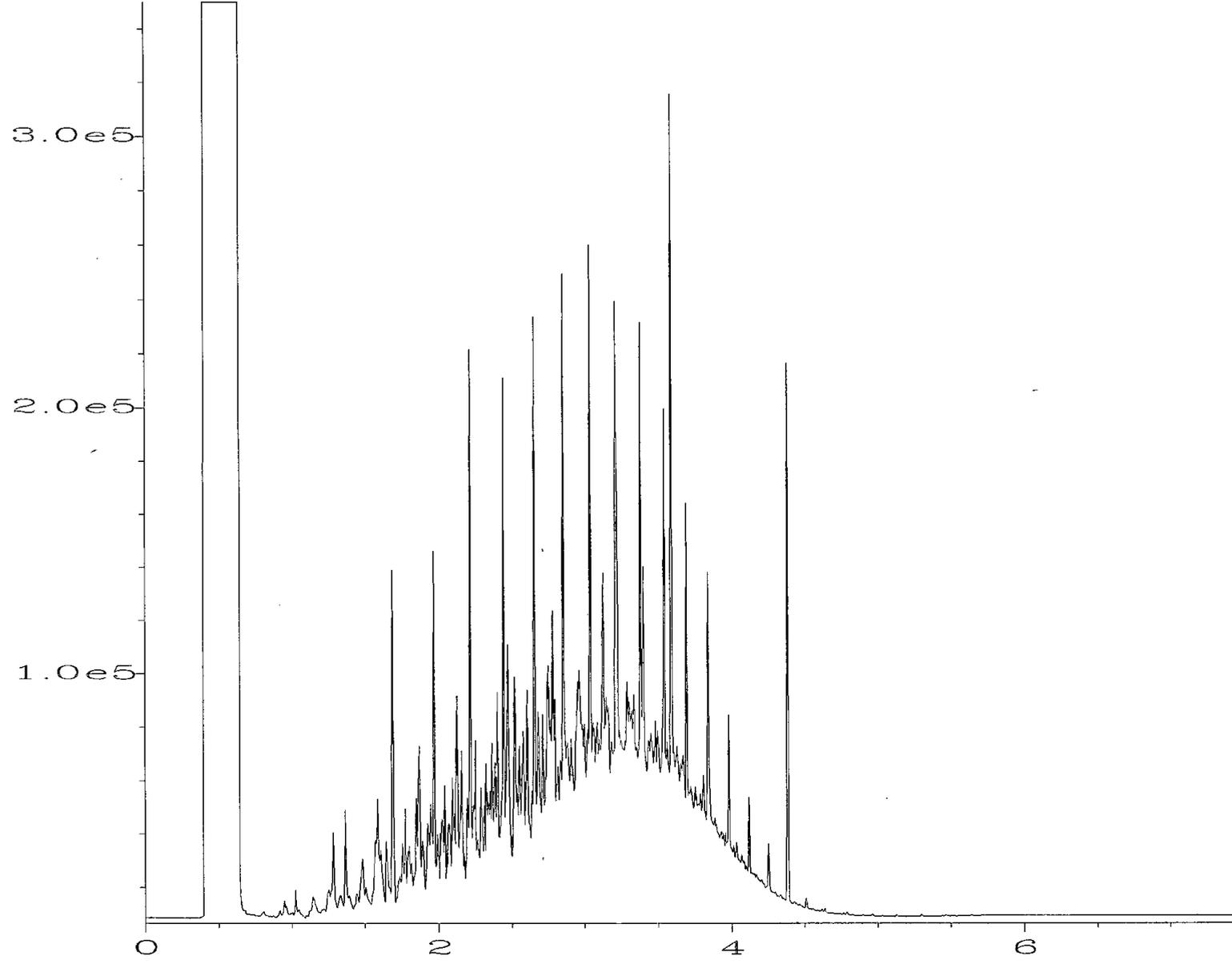
DMW - 5IA



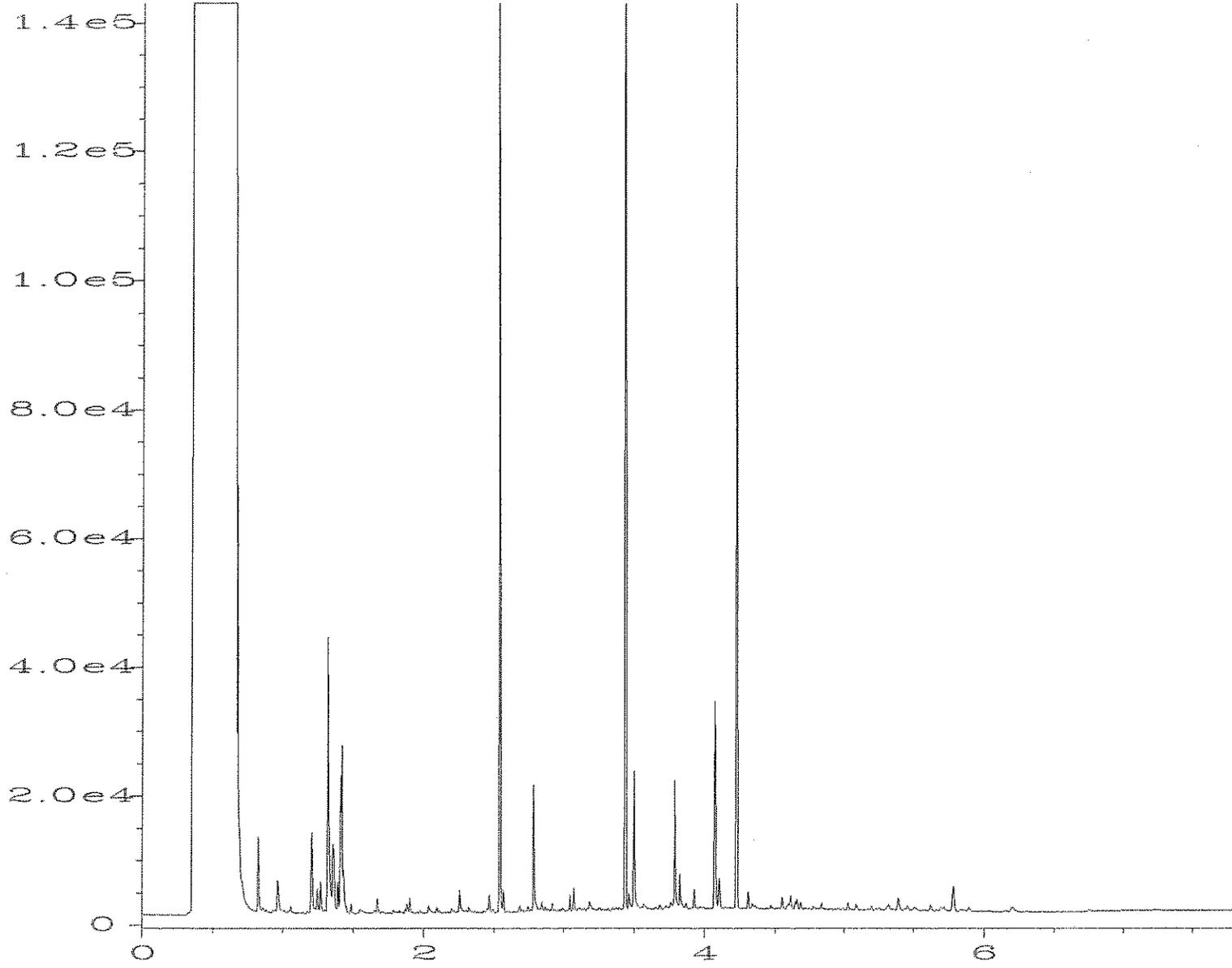
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Operator : TL Page Number : 1  
Instrument : GC1 Vial Number : 12  
Sample Name : 003357-03 Injection Number : 1  
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Report Created on: 15 Oct 20 10:13 AM Analysis Method : DEFAULT.MTH



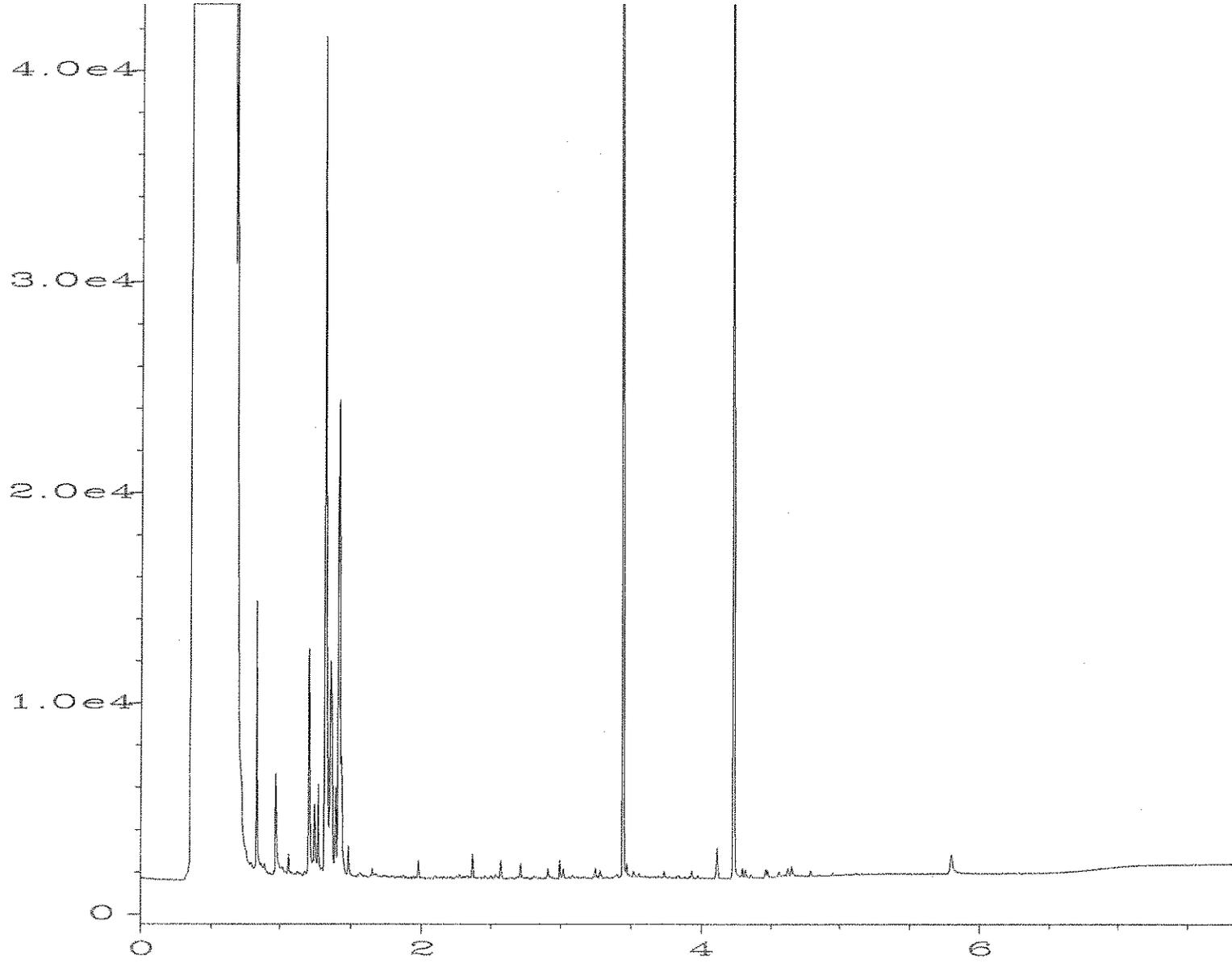
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Operator : TL  
Instrument : GC1  
Sample Name : 00-736 mb  
Run Time Bar Code :  
Acquired on : 23 Mar 20 11:01 AM  
Report Created on: 15 Oct 20 10:14 AM  
Page Number : 1  
Vial Number : 6  
Injection Number : 1  
Sequence Line : 3  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



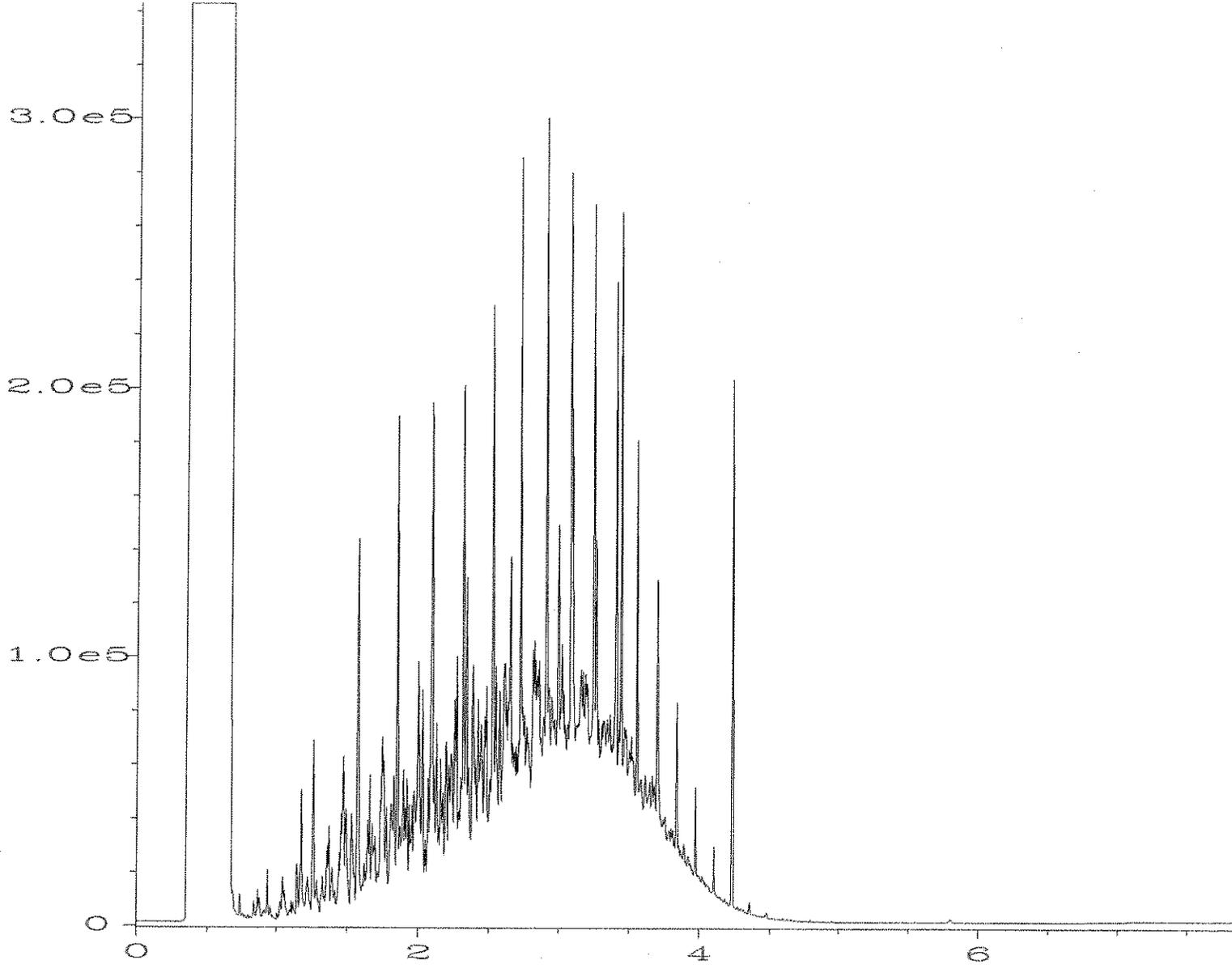
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Operator : TL  
Instrument : GC1  
Sample Name : 1000 Dx 59-162B  
Run Time Bar Code : 23 Mar 20 02:11 PM  
Acquired on : 15 Oct 20 10:14 AM  
Page Number : 1  
Vial Number : 5  
Injection Number : 1  
Sequence Line : 4  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



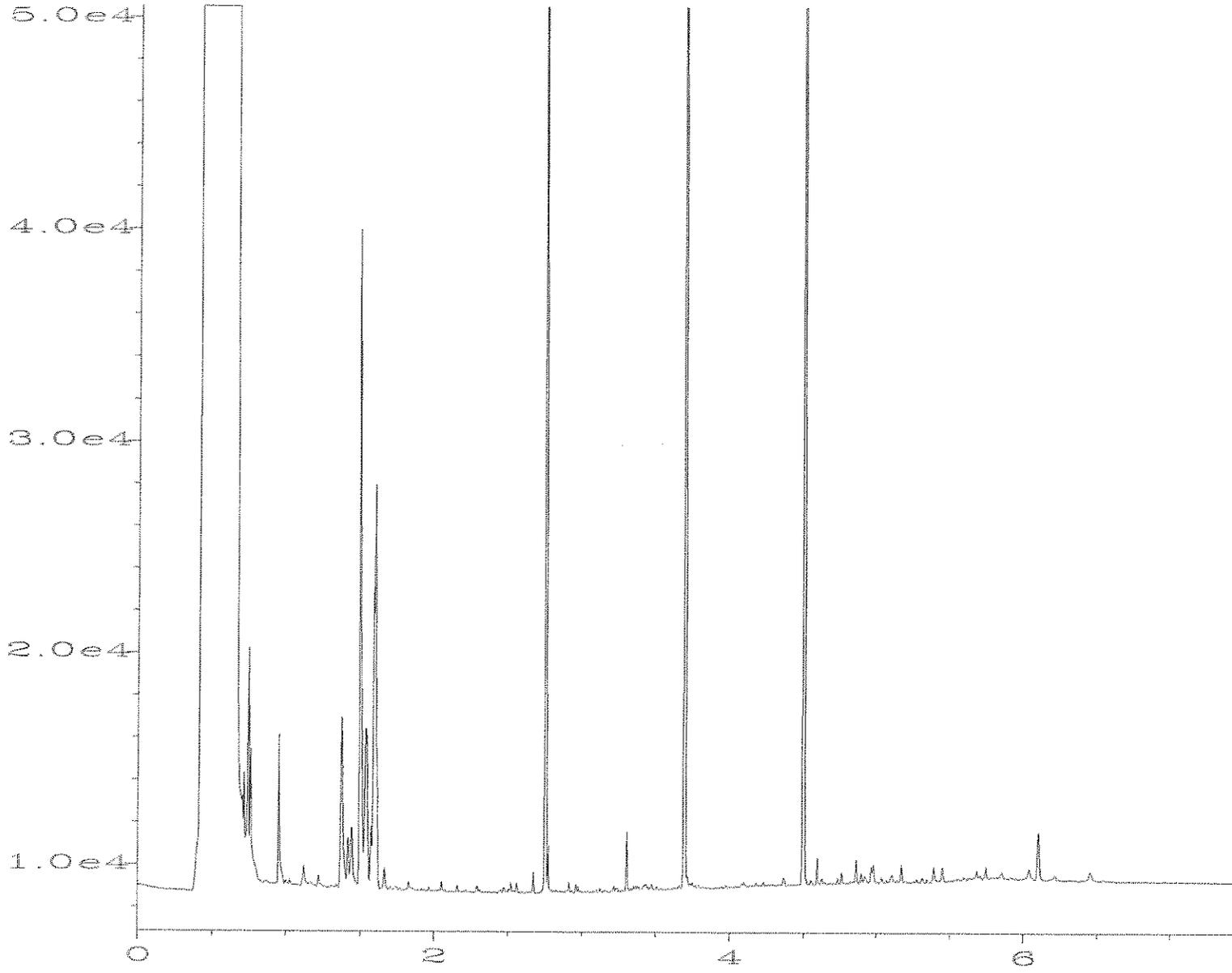
Data File Name : C:\HPCHEM\4\DATA\10-15-20\023F0601.D  
Operator : TL  
Instrument : GC#4  
Sample Name : 010245-01  
Run Time Bar Code : 15 Oct 20 01:57 PM  
Acquired on : 16 Oct 20 11:05 AM  
Page Number : 1  
Vial Number : 23  
Injection Number : 1  
Sequence Line : 6  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



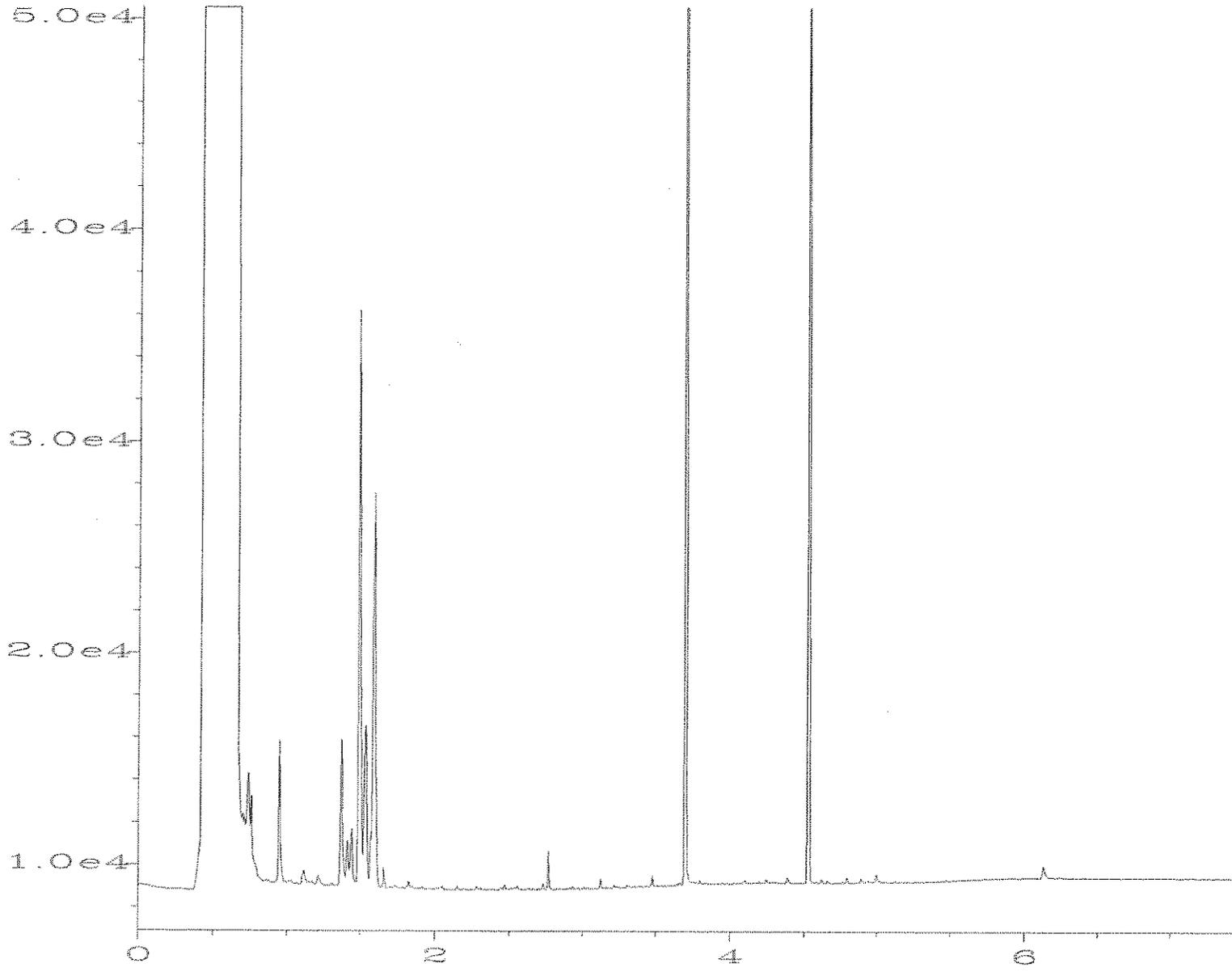
Data File Name : C:\HPCHEM\4\DATA\10-15-20\022F0601.D  
Operator : TL  
Instrument : GC#4  
Sample Name : 00-2331 mb2  
Run Time Bar Code : 15 Oct 20 01:44 PM  
Acquired on : 16 Oct 20 11:05 AM  
Page Number : 1  
Vial Number : 22  
Injection Number : 1  
Sequence Line : 6  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



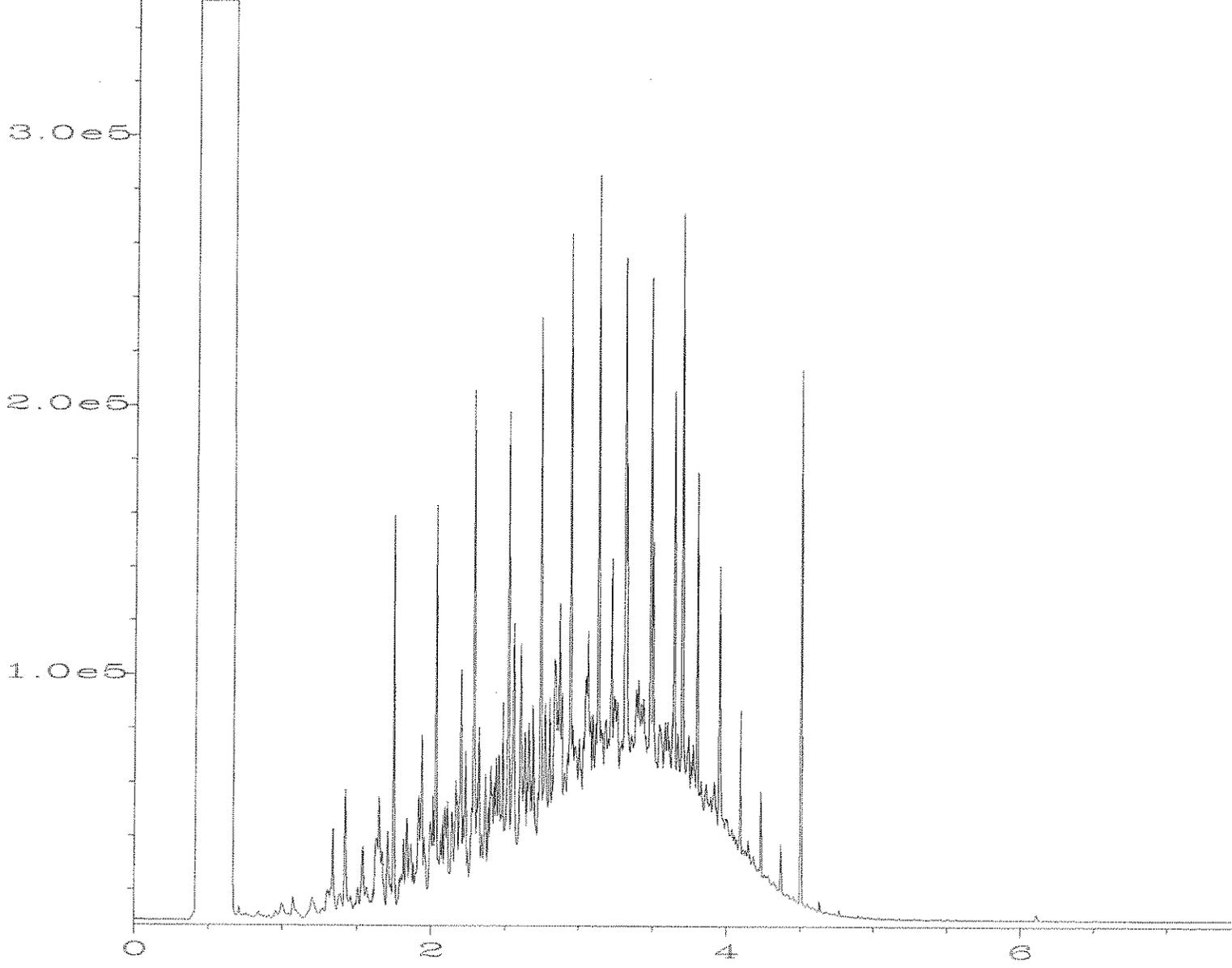
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 Sample Name : 1000 Dx 60-170B  
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 Vial Number : 5  
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 Sequence Line : 7  
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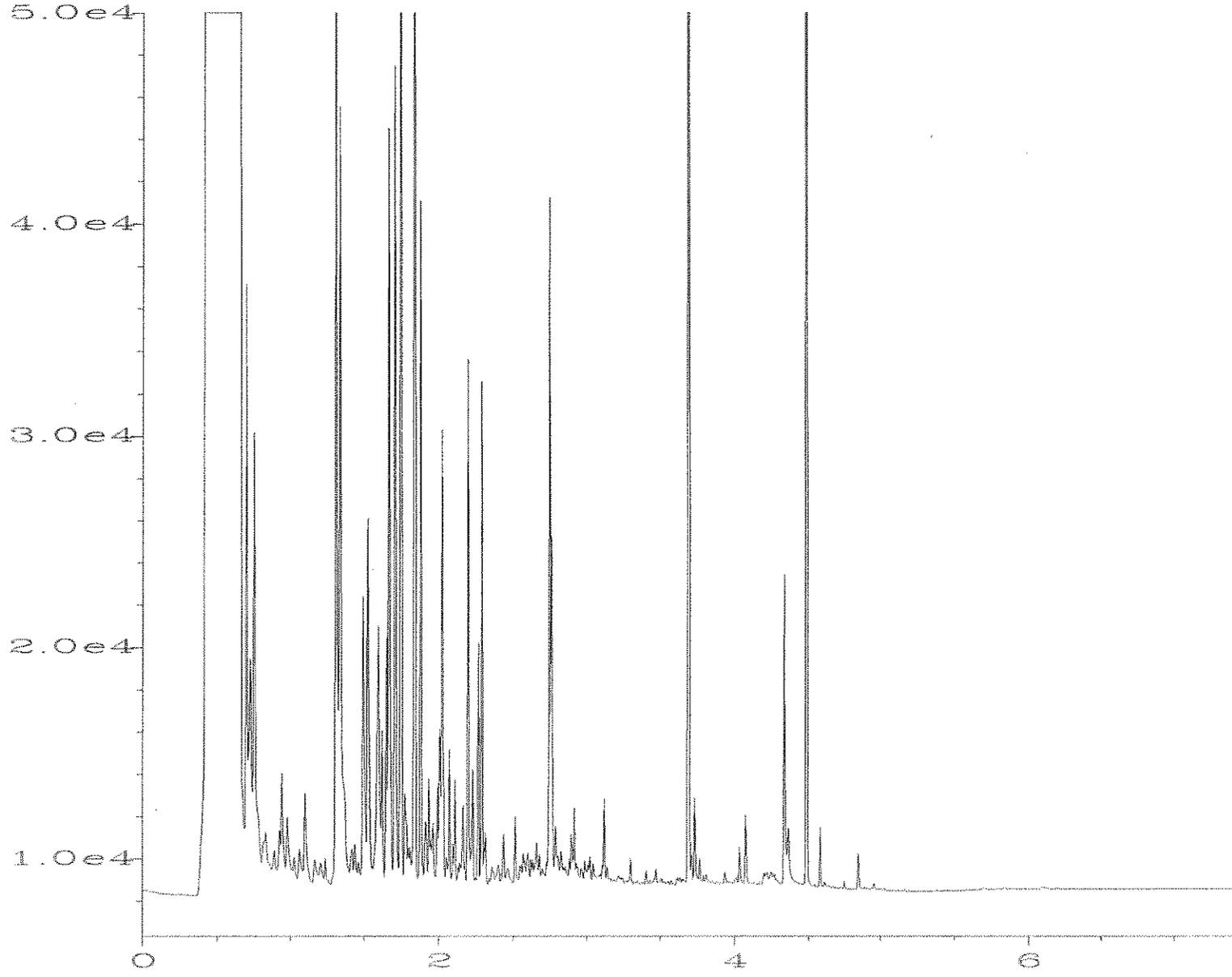
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Operator : TL  
Instrument : GC1  
Sample Name : 010245-01 sg  
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Acquired on : 15 Oct 20 03:06 PM  
Report Created on: 15 Oct 20 03:06 PM  
Page Number : 1  
Vial Number : 22  
Injection Number : 1  
Sequence Line : 5  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



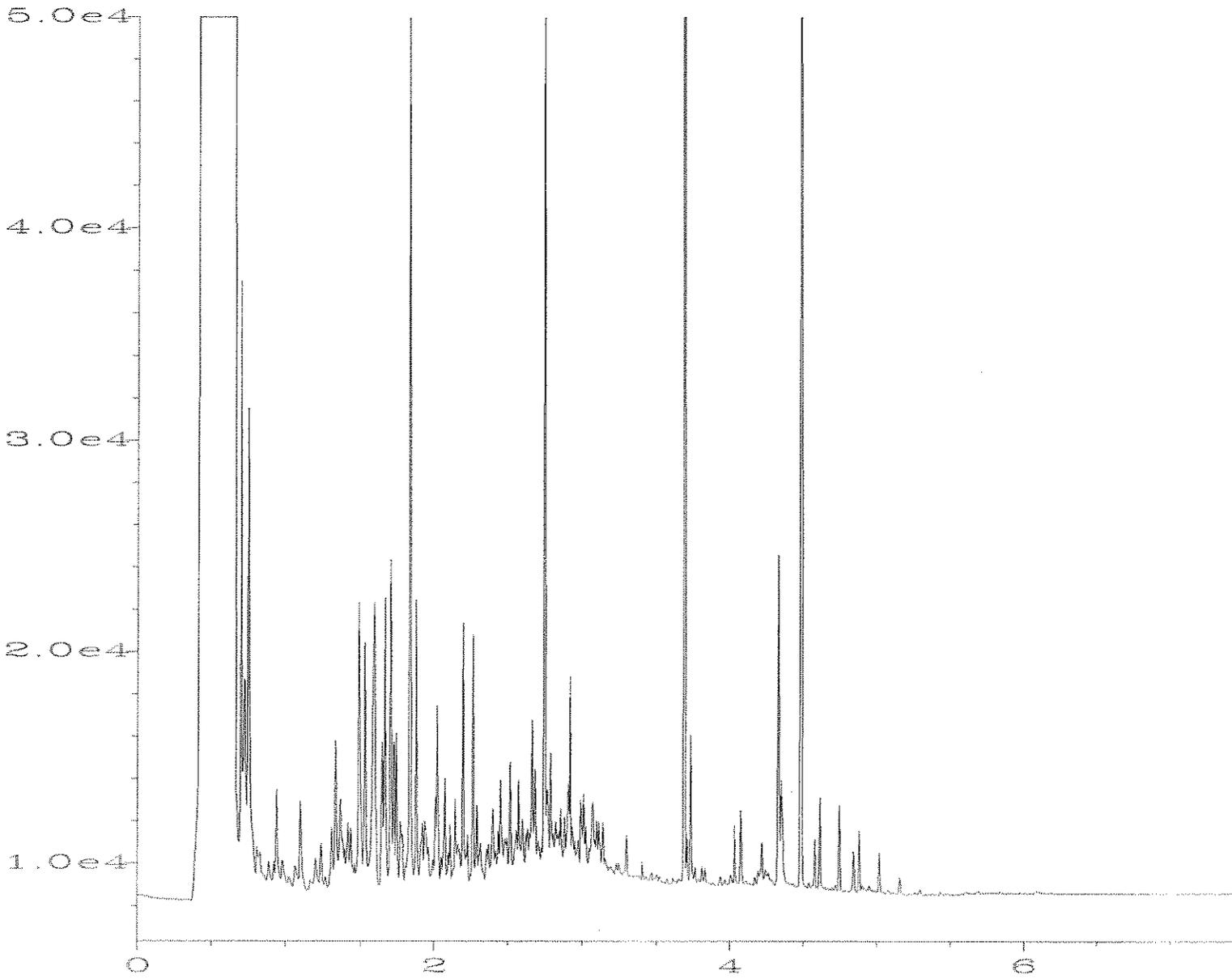
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Instrument : GC1  
Sample Name : 00-2331 mb2 sg  
Run Time Bar Code : 15 Oct 20 02:34 PM  
Acquired on : 16 Oct 20 10:55 AM  
Page Number : 1  
Vial Number : 21  
Injection Number : 1  
Sequence Line : 5  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



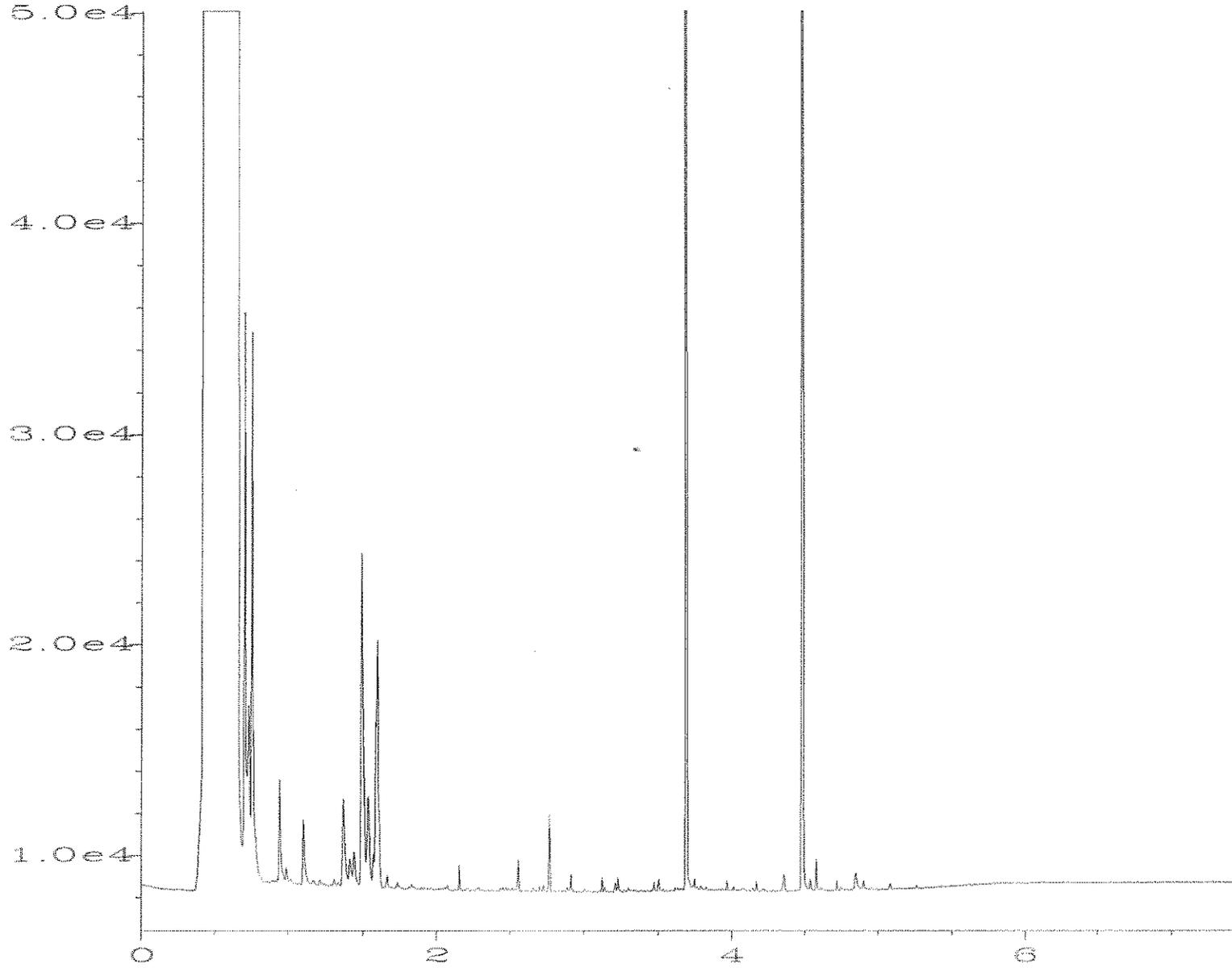
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Sample Name : 1000 Dx 60-170B  
Run Time Bar Code : 15 Oct 20 02:11 PM  
Acquired on : 16 Oct 20 10:55 AM  
Page Number : 1  
Vial Number : 5  
Injection Number : 1  
Sequence Line : 4  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



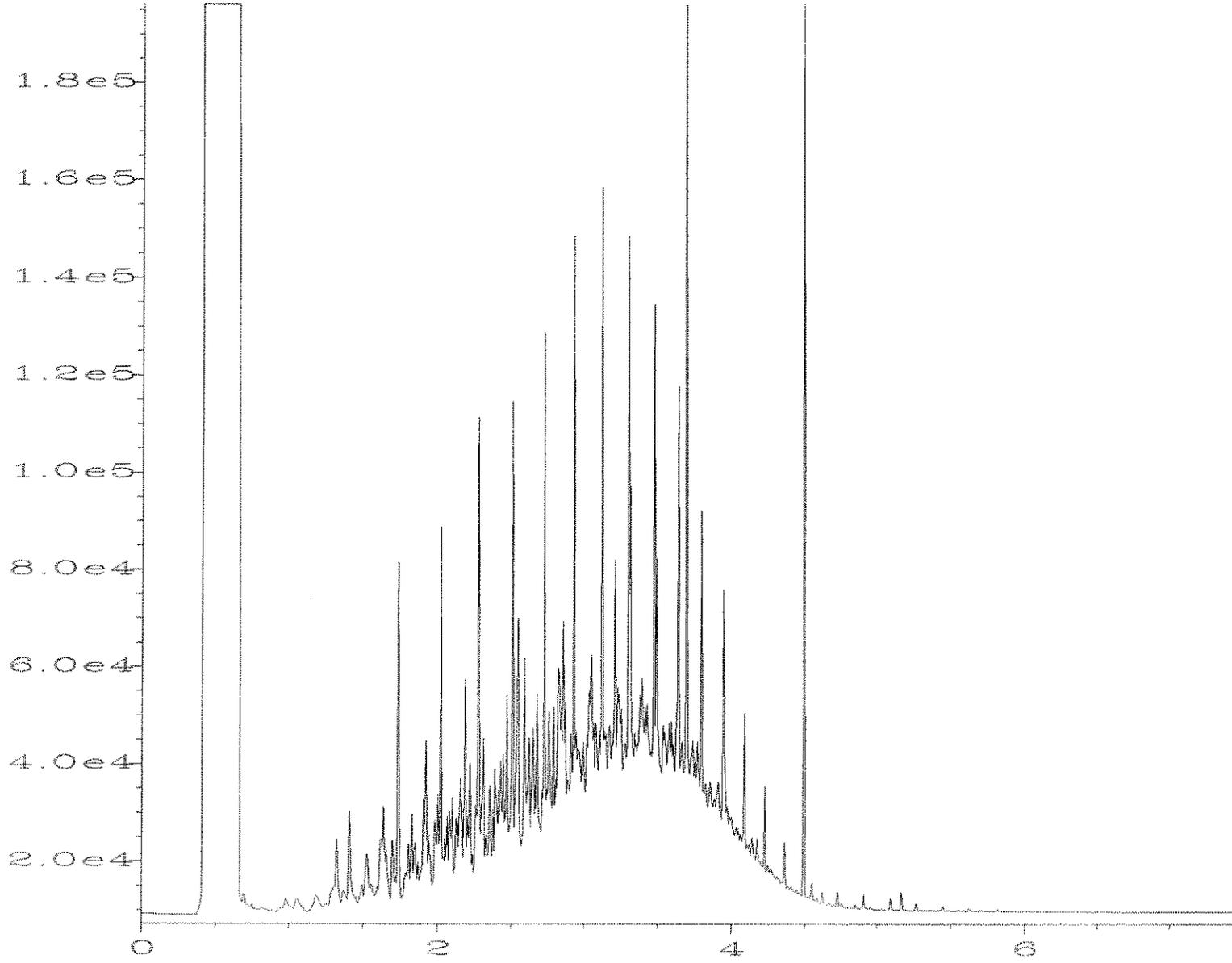
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Operator : TL  
Instrument : GC1  
Sample Name : 011019-05  
Run Time Bar Code : 03 Nov 20 03:27 PM  
Acquired on : 04 Nov 20 09:50 AM  
Page Number : 1  
Vial Number : 37  
Injection Number : 1  
Sequence Line : 8  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



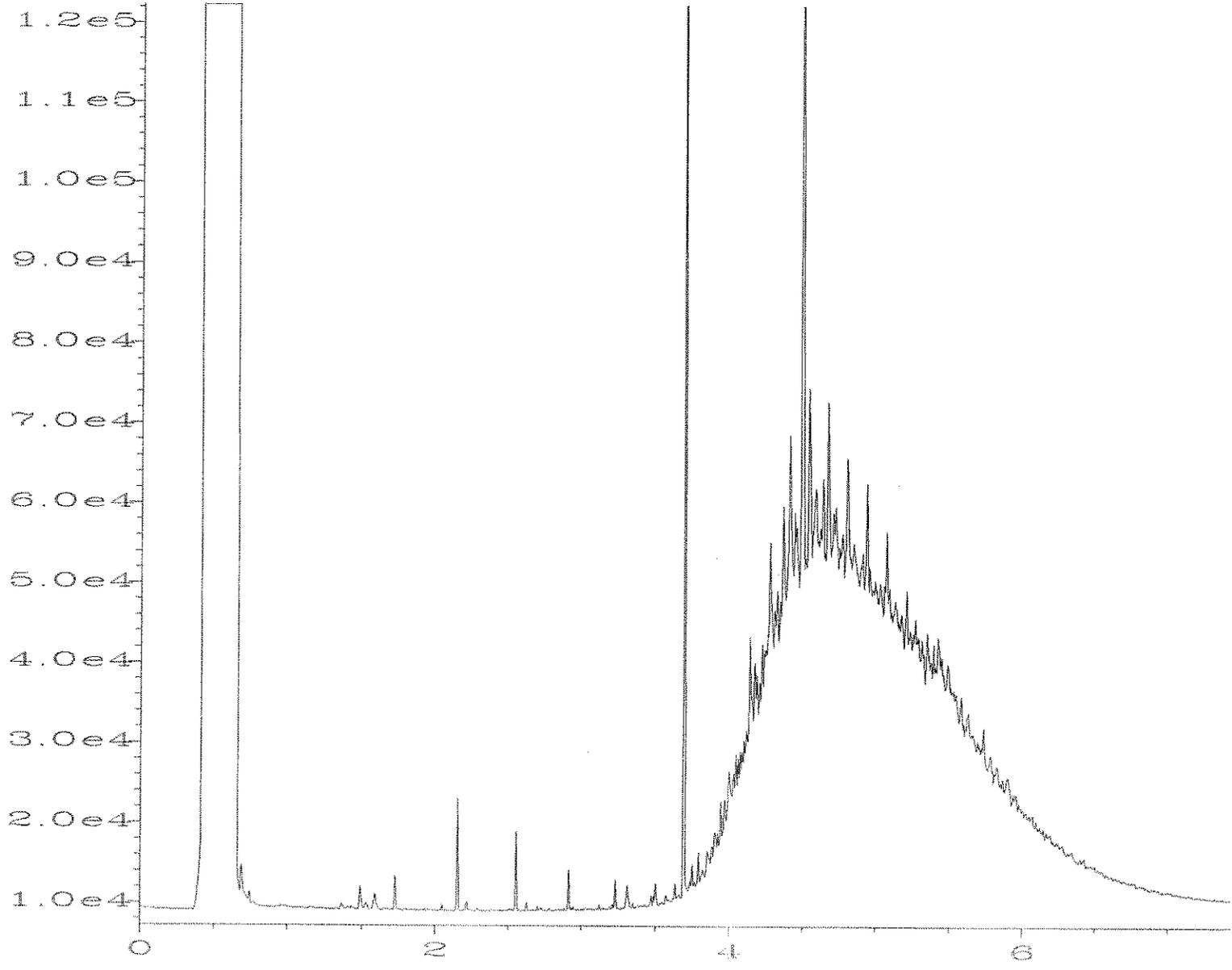
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Instrument : GC1  
Sample Name : 011019-06  
Run Time Bar Code : 03 Nov 20 03:39 PM  
Acquired on : 04 Nov 20 09:51 AM  
Page Number : 1  
Vial Number : 38  
Injection Number : 1  
Sequence Line : 8  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\11-03-20\027F0701.D  
Operator : TL  
Instrument : GC1  
Sample Name : 00-2465 mb  
Run Time Bar Code : 03 Nov 20 02:07 PM  
Acquired on : 05 Nov 20 01:06 PM  
Page Number : 1  
Vial Number : 27  
Injection Number : 1  
Sequence Line : 7  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH  
Report Created on: 05 Nov 20 01:06 PM



Data File Name : C:\HPCHEM\1\DATA\11-03-20\003F0201.D  
Operator : TL  
Instrument : GC1  
Sample Name : 500 Dx 61-146D  
Run Time Bar Code : 03 Nov 20 06:04 AM  
Acquired on : 05 Nov 20 01:05 PM  
Page Number : 1  
Vial Number : 3  
Injection Number : 1  
Sequence Line : 2  
Instrument Method: DX.MTH  
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\11-03-20\002F0201.D  
 Operator : TL  
 Instrument : GC1  
 Sample Name : 500 MO 61-114B  
 Run Time Bar Code :  
 Acquired on : 03 Nov 20 05:52 AM  
 Report Created on: 05 Nov 20 01:05 PM  
 Page Number : 1  
 Vial Number : 2  
 Injection Number : 1  
 Sequence Line : 2  
 Instrument Method: DX.MTH  
 Analysis Method : DEFAULT.MTH

## **APPENDIX D**

### **Survey Data**



**APPENDIX E**  
**Supporting Documents for Arsenic Screening Level**  
**in Groundwater**

## **APPENDIX E**

# **SUPPORTING DOCUMENTS FOR ARSENIC SCREENING LEVEL IN GROUNDWATER**

This appendix provides the rationale for our conclusion that arsenic concentrations in groundwater at the Seattle DOT Mercer Parcels Site (Mercer site) are consistent with natural background levels in this area and why Ecology's proposed background value for arsenic of 8 µg/L in the Puget Sound basin is appropriate for use as a screening level at this Site (Ecology 2018).

### **Site Arsenic Concentrations are Consistent with Federal, State, and County Background Levels**

Arsenic concentrations in on-site groundwater ranges from <0.12 to 12.3 µg/L (see Attachments E-1 and E-2). This distribution is well within the range of natural background concentrations for groundwater nationally, in Washington state, and in the Puget Sound basin (see extensive literature cited in Ecology 2018).

On-site concentrations are also consistent with a recent King County study, which documented natural arsenic concentrations ranging from less than 0.5 µg/L to 75 µg/L in domestic wells and over 100 µg/L in monitoring wells associated with natural peat deposits (King County 2006). (We note that the highest on-site arsenic concentration, 12.3 µg/L, was in a well installed in a peat deposit.)

### **Site Arsenic Concentrations are Consistent with Local Background Levels**

Arsenic data from three nearby, cross-gradient monitoring wells, representative of local background conditions, is consistent with arsenic data from the Mercer site. The three now-decommissioned wells, Wells 1, 2, and 101, were located at the IRIS Holdings (IRIS) petroleum cleanup site at 500 5<sup>th</sup> Avenue North. The wells were located well outside the zone of former petroleum contamination and contained no detectable GRO, DRO, and ORO (whose breakdown tends to mobilize arsenic). Arsenic in groundwater was not identified as a constituent of concern in groundwater at the IRIS site and Ecology granted the site a no-further-action determination that required no cleanup action or further monitoring for arsenic. The IRIS wells were installed in glacial sediments similar to the Mercer site wells. The elevations of the IRIS wells correspond to the elevations of the shallow, intermediate, and deep zones at the Mercer site.

Arsenic concentrations in the IRIS wells ranged from <0.1 to 14 µg/L. This range encompasses the observed range of arsenic the Site. In addition, formal statistical hypothesis testing of the arsenic distributions at the Mercer and IRIS sites concluded that there is no evidence for a difference in distributions and that the data sets from the two sites appear comparable (see Attachment E-1).

## Site Arsenic Concentrations do not Reflect Mobilization Caused by Petroleum Degradation

Arsenic levels in groundwater are typically controlled the amount of naturally occurring arsenic in the aquifer material along with the groundwater redox conditions, with reducing conditions mobilizing the naturally occurring arsenic in the aquifer material. Reducing conditions can be associated with decomposition of soil organic material, such as occurs in glacial deposits or peat; this is explained in Ecology (2018). Similarly, naturally occurring arsenic can be mobilized by decomposition of petroleum, as explained in Ecology (2016). As shown in Figures E-a and E-b, the higher levels of arsenic at the site are associated with reducing conditions, as expected; however, higher levels of arsenic are not associated with higher levels of petroleum hydrocarbons. Taken together, these two pieces of evidence corroborate the conclusion that on-site arsenic levels are due to variations in natural background conditions and not from on-site, anthropogenic sources (i.e., petroleum impacts).

## An Arsenic Value of 8 µg/L is Appropriate to Use as a Screening Level at the Site

Ecology (2018) proposed a background level of arsenic in Puget Sound basin groundwater of 8 µg/L based on statistical analysis of sample data from a large number of drinking water wells. Ecology determined, with a high degree of statistical confidence, that 90 percent of the data points in the background population would be equal to or less than 8 µg/L. The table below shows that the 90<sup>th</sup> percentile for the local background data for the IRIS site is 8 µg/L and for the SDOT Mercer Parcels site is 9 µg/L (rounded to one significant figure as was done in the Ecology report). Given the similarity of these three values, we conclude that the use of 8 µg/L as a conservative, background-based screening level, for the purposes of identifying COPCs, is reasonable for the SDOT Mercer Parcels site. MTCASat 3.0 input/output files are presented in Attachment E-3.

Site	Arsenic in Groundwater (µg/L) (distribution & statistics calc'd using Ecology's MTCASat 3.0)				
	Distribution	50th Percentile	4 X 50th Percentile	80th Percentile	90th Percentile
SDOT Mercer Parcels	Normal	4.61	18.43	7.46	8.95
IRIS	Normal	4.02	16.08	6.58	7.92
Mercer + IRIS	Normal	4.44	17.77	7.16	8.59

## References

Ecology 2016. Guidance for Remediation of Petroleum Contaminated Sites. Toxics Cleanup Program. Washington State Department of Ecology. Olympia, Washington. Publication No. 10-09-057. REVISED June 2016.

## **E-3** | Supporting Documents for Arsenic Screening Level in Groundwater

Ecology 2018. Natural Background Groundwater Arsenic Concentrations in Washington State. Toxics Cleanup Program. May 2018 (Review Draft). Publication No. 14-09-044.

King County. 2006. Naturally Occurring Arsenic in Groundwater from Glacial Deposits in King County, Washington. NGWA Naturally Occurring Contaminants Conference. February 6, 2006. Eric Ferguson and Ken Johnson, King County Groundwater Protection Program.

### **Attachments and Figures**

Attachment E-1. Technical memorandum titled “Notes on the evaluation of Mercer Street well arsenic concentrations compared to IRIS well arsenic concentrations (from EIM).” March 29, 2021. Lorraine Read (Exa Data & Mapping).

Attachment E-2. Summary of arsenic values used in statistical analyses.

Attachment E-3. MTCAS*tat* input/output files.

Figure E-a. Arsenic versus ORP in Groundwater.

Figure E-b. Arsenic versus TPH in Groundwater.

## **ATTACHMENT E1**

Notes on the evaluation of Mercer Street well arsenic concentrations compared to IRIS well arsenic concentrations (from EIM). March 29, 2021 Lorraine Read (Exa Data & Mapping).

**Data prep:**

- Turbidity screen: if turbidity > 50 NTU or not available use dissolved arsenic; otherwise use total.
- If both dissolved and total arsenic were available for the same sample, used the maximum value (a conservative decision, intended to avoid underestimating the arsenic concentrations; the Pearson correlation between dissolved and total was very high (0.985) and most points fell on the 1:1 line, so little positive bias is introduced with this approach; Figure 1).
- Reviewed the spatial distribution of spring vs fall samples from mercer street site (Figure 2). Spring and fall sampled wells are interspersed across site; sampling does not appear to have a spatial-seasonal confounding (e.g., spring and fall sampled wells are in different portions of the site), especially as it relates to groundwater flow (west to east).

**Final datasets [presented in Attachment E-2]:**

- Mercer street: n=31 (21 wells from spring; 10 wells from fall); includes shallow, intermediate, and deep wells.
  - The 31 wells capture the 3-dimensional spatial variability within the site.
  - Different locations were sampled spring and fall; there is no spatial-seasonal confounding; a seasonal signal is not expected and is not apparent. Consequently, the data across the two seasons were pooled.
  - 26 detects and 5 non-detects.
- IRIS data: n=12 (3 wells from each of 4 seasons in 2011)
  - Both spatial and temporal variability is represented
  - Assumes temporal and spatial independence, and no seasonal signal.
  - 10 detects and 2 non-detects.

**Assumptions:** Each dataset assumed to represent independent and identically distributed (iid) data drawn from a single population (unique to each site). The datasets capture temporal variability within a year and 3-dimensional spatial variability at each site. Due to presence of non-detects (5/31 in Mercer Street wells and 2/12 in IRIS wells), Kaplan-Meier (KM) estimates of mean and sd will be used (calculated in ProUCL).

**Results:**

Both datasets appear normally distributed (based on goodness-of-fit tests in ProUCL not rejected for detected data).

**Distributional comparison between Mercer Street wells (n=31) and IRIS wells (n=12):**

- Graphical comparison of the empirical cumulative distribution function (ecdf) plots (Figure 3) shows the relationship between the two datasets. Steeper functions have less variance (a tighter distribution); functions shifted to the right have higher concentrations than those to the left; a large X-distance (concentration) for a given Y-distance (proportion) indicates a big gap in observed concentration values: this can be particularly noteworthy at the high end as it can indicate potential outliers. These datasets do not appear to have outliers.

- Kolmogorov-Smirnoff (K-S) is a formal hypothesis test comparing the two distribution functions. K-S test is non-parametric and is sensitive to differences in both location and shape (e.g., mean and variance).
- The K-S test interp: the larger the p-value the less evidence AGAINST the null hypothesis of equality of the two distributions; the smaller the p-value the more evidence AGAINST the null, and if the p-value is sufficiently small, e.g.,  $p < 0.10$  or  $p < 0.05$ , we would want to reject the null hypothesis.
- The data do not suggest we should reject hypothesis of distributional equality between the two distributions (K-S test  $p = 0.89$ ,  $n_1 = 12$ ,  $n_2=31$ ).

#### Quantitative comparison between the two datasets:

- Summary statistics for the IRIS background wells and the Mercer Street wells are summarized in Table 1.
- Outlier analysis: The highest concentration (12.3  $\mu\text{g/L}$ ) is from well HMW-1S. This value is not a statistical outlier, but it is from a well installed in a natural peat deposit and peat deposits are known to contain high levels of arsenic. Consequently, it may be reasonable to exclude results from this well because of its unique geology. Summary stats from the Mercer Street dataset with this well excluded are also provided in the table.
- Comparison to 90/90 UTL threshold:
  - If the value of 8  $\mu\text{g/L}$  is the 90/90 UTL of background data, we expect approximately 10% of background data to exceed this threshold. The UTL itself is a random variable derived from a random sample of background wells; so  $> 10\%$  exceedance may occur even within the background population from which the UTL was derived. A value close to 10% should not be alarming, but a value  $> 10\%$  may warrant testing additional samples from the site wells.
- Comparison of Means/Medians:
  - Two non-parametric tests comparing the means/medians were used based on tests available in ProUCL. Both the Tarone-Ware ( $p=0.77$ ) and Gehan's test ( $p=0.33$ ) failed to reject the null hypothesis of equality. The data do not suggest that the null hypothesis of equality of means should be rejected.
  - The magnitude of difference between means (Mercer – IRIS) = 0.59  $\mu\text{g/L}$  with 90% CI [-1.04  $\mu\text{g/L}$ , 2.22  $\mu\text{g/L}$ ].

#### Conclusions:

- Using all values, the two datasets appear comparable. Their distributions are not substantively different, and the magnitude of the difference in mean concentrations is approximately 0.6  $\mu\text{g/L}$  (90% CI of [-1.04  $\mu\text{g/L}$ , 2.22  $\mu\text{g/L}$ ]).
- There is a slightly higher range of concentrations in the Mercer Street well, but this is largely driven by one well (HMW-1S).

**TABLES and FIGURES**

**Table 1. Summary statistics for IRIS Background and Mercer Street wells**

<b>Summary Statistic</b>	<b>IRIS Background Wells</b>	<b>Mercer Street Wells</b>	<b>Mercer Street Wells Excluding HMW-1S</b>
Sample size	12	31	30
Detection Frequency (# detects/sample size)	83% (10/12)	84% (26/31)	87% (26/30)
Mean ± SD	4.02 ± 2.72 µg/L	4.61 ± 3.18 µg/L	4.35 ± 2.90 µg/L
Range	< 0.12 to 9.3 µg/L	< 0.12 to 12.3 µg/L	< 0.12 to 10.7 µg/L
Proportion exceeding 8 µg/L threshold	8.3% (1/12)	12.9% (4/31)	10% (3/30)
Maximum EF			
5 µg/L	1.86	2.46	2.14
8 µg/L	1.16	1.54	1.34
Normal 95 UCL	5.5 µg/L	5.6 µg/L	5.3 µg/L
Abbreviations: EF = exceedance factor SD = standard deviation UCL = upper confidence limit (for the mean)			

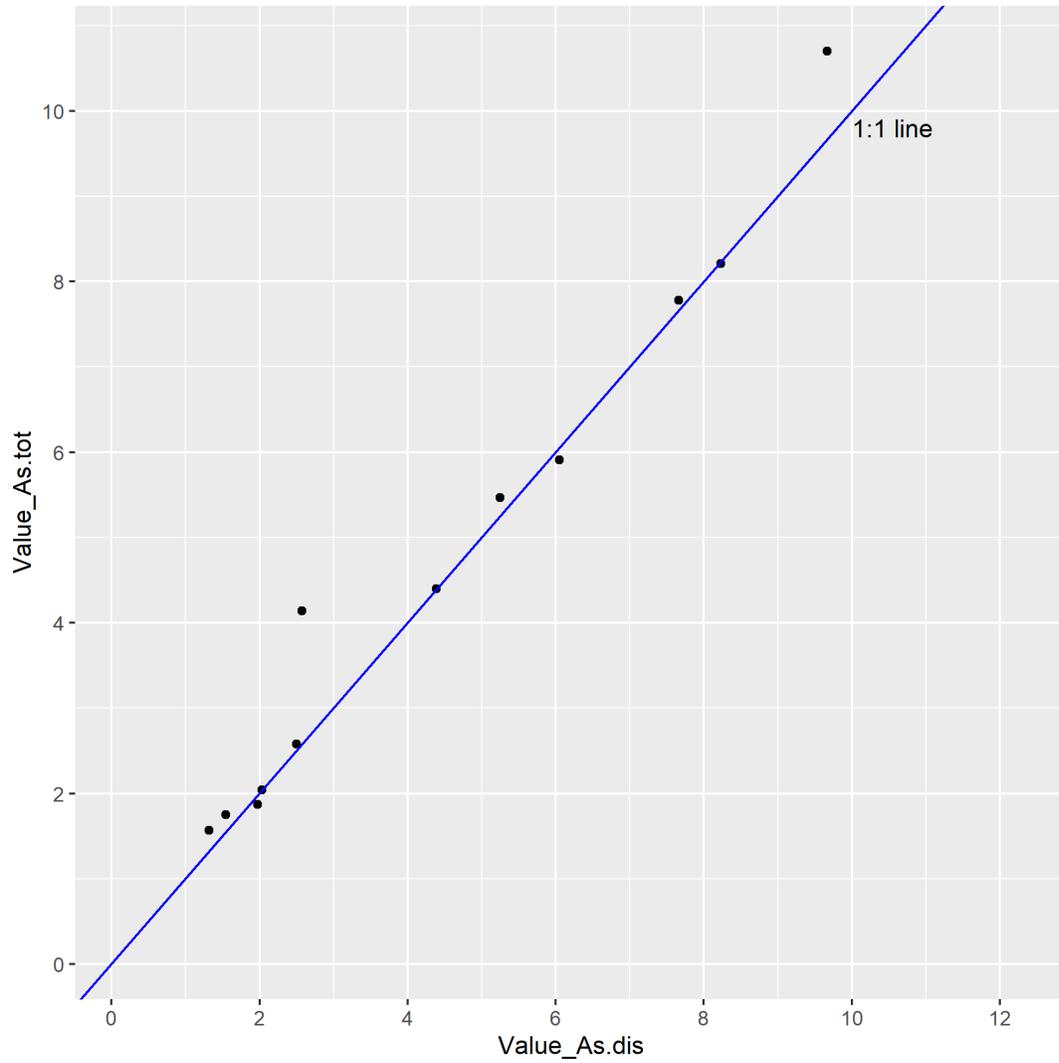
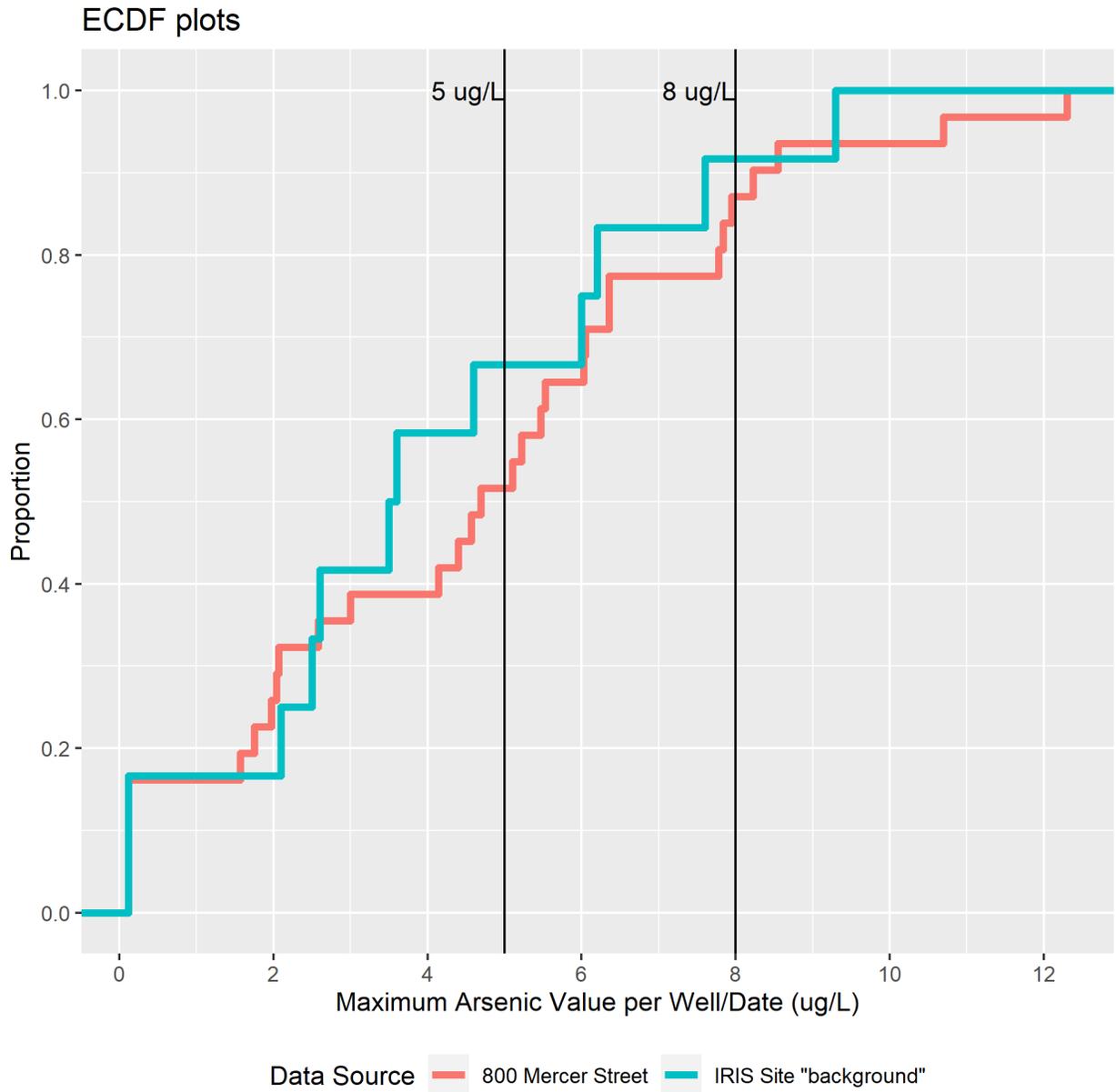


Figure 1. Correlation between dissolved and total arsenic concentrations in Mercer Street Wells.



**Figure 2. Spatial plot of well locations at 800 Mercer Street, indicating season well was sampled and concentration range for arsenic values used in analysis.**



**Figure 3. Empirical cumulative distribution function (ecdf) plots for arsenic concentrations from Mercer Street and IRIS background wells. Vertical lines indicate concentrations of the screening thresholds at 5  $\mu\text{g/L}$  and 8  $\mu\text{g/L}$ .**

## **ATTACHMENT E2**

Table E-2 - Arsenic for Statistics

Data provider	Location ID	Field Collection Start Date	Sample ID	Subfacility code	Result Parameter Name	Result Value	Result Value Units	lab qualifications	Use?
HC	HMW10D	03/16/20	HMW-10D-GW-20200316	800 Mercer Street	Arsenic, Total	5.2	ug/L		Yes; turbidity <= 50 NTU
HC	HMW10S	03/16/20	HMW-10S-GW-20200316	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW11B	03/16/20	HMW-11B-GW-20200316	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW11S	03/11/20	HMW-11S-GW-20200311	800 Mercer Street	Arsenic, Dissolved	2.57	ug/L		No; used paired total result since it is higher
HC	HMW11S	03/11/20	HMW-11S-GW-20200311	800 Mercer Street	Arsenic, Total	4.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW12D	09/10/20	HMW-12D-20200910	800 Mercer Street	Arsenic, Dissolved	1.54	ug/L		No; used paired total result since it is higher
HC	HMW12D	09/10/20	HMW-12D-20200910	800 Mercer Street	Arsenic, Total	1.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW13D	09/10/20	HMW-13D-20200910	800 Mercer Street	Arsenic, Dissolved	5.25	ug/L		No; used paired total result since it is higher
HC	HMW13D	09/10/20	HMW-13D-20200910	800 Mercer Street	Arsenic, Total	5.5	ug/L		Yes; turbidity <= 50 NTU
HC	HMW14D	09/16/20	HMW-14D-20200916	800 Mercer Street	Arsenic, Total	5.91	ug/L		No; used paired total result since it is higher
HC	HMW14D	09/16/20	HMW-14D-20200916	800 Mercer Street	Arsenic, Dissolved	6.1	ug/L		Yes
HC	HMW15B	09/16/20	HMW-15B-20200916	800 Mercer Street	Arsenic, Dissolved	7.66	ug/L		No; used paired total result since it is higher
HC	HMW15B	09/16/20	HMW-15B-20200916	800 Mercer Street	Arsenic, Total	7.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW16B	09/18/20	HMW-16B-20200918	800 Mercer Street	Arsenic, Dissolved	8.23	ug/L		No; used paired total result since it is higher
HC	HMW16B	09/18/20	HMW-16B-20200918	800 Mercer Street	Arsenic, Total	8.2	ug/L		Yes; turbidity <= 50 NTU
HC	HMW17S	09/17/20	HMW-17S-20200917	800 Mercer Street	Arsenic, Dissolved	1.32	ug/L		No; used paired total result since it is higher
HC	HMW17S	09/17/20	HMW-17S-20200917	800 Mercer Street	Arsenic, Total	1.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW18S	09/17/20	HMW-18S-20200917	800 Mercer Street	Arsenic, Dissolved	2.5	ug/L		No; used paired total result since it is higher
HC	HMW18S	09/17/20	HMW-18S-20200917	800 Mercer Street	Arsenic, Total	2.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW19S	09/17/20	HMW-19S-20200917	800 Mercer Street	Arsenic, Total	1.87	ug/L		No; used paired dissolved result since it is higher
HC	HMW19S	09/17/20	HMW-19S-20200917	800 Mercer Street	Arsenic, Dissolved	2.0	ug/L		Yes
HC	HMW1D	03/09/20	HMW-1D-GW-20200309	800 Mercer Street	Arsenic, Total	2.59	ug/L		No; turbidity > 50 NTU; no other data avail from this well
HC	HMW1IB	03/10/20	HMW-1IB-GW-20200310	800 Mercer Street	Arsenic, Total	0.12	ug/L	U	No; turbidity > 50 NTU; no other data avail from this well
HC	HMW1S	03/25/19	HMW-1S-GW-20190325	800 Mercer Street	Arsenic, Total	14	ug/L		No; turbidity > 50 NTU; used 3/11/20 dissolved result instead
HC	HMW1S	03/11/20	HMW-1S-GW-20200311	800 Mercer Street	Arsenic, Total	13.5	ug/L		No; turbidity > 50 NTU; used paired dissolved result instead
HC	HMW1S	03/11/20	HMW-1S-GW-20200311	800 Mercer Street	Arsenic, Dissolved	12.3	ug/L		Yes
HC	HMW20IA	09/18/20	HMW-20IA-20200918	800 Mercer Street	Arsenic, Dissolved	4.39	ug/L		No; used paired total result since it is higher
HC	HMW20IA	09/18/20	HMW-20IA-20200918	800 Mercer Street	Arsenic, Total	4.4	ug/L		Yes; turbidity <= 50 NTU
HC	HMW20S	09/18/20	HMW-20S-20200918	800 Mercer Street	Arsenic, Dissolved	2.03	ug/L		No; used paired total result since it is higher
HC	HMW20S	09/18/20	HMW-20S-20200918	800 Mercer Street	Arsenic, Total	2.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW2D	03/12/20	HMW-2D-GW-20200312	800 Mercer Street	Arsenic, Total	6.4	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW2IA	03/12/20	HMW-2IA-GW-20200312	800 Mercer Street	Arsenic, Total	5.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW2IB	03/12/20	HMW-2IB-GW-20200312	800 Mercer Street	Arsenic, Total	7.49	ug/L		No; turbidity > 50 NTU; no other data avail from this well
HC	HMW2S	03/12/20	HMW-2S-GW-20200312	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity > 50 NTU, but field notes indicate "clear" sample.
HC	HMW3D	03/13/20	HMW-3D-GW-20200313	800 Mercer Street	Arsenic, Total	4.7	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW3IA	03/13/20	HMW-3IA-GW-20200313	800 Mercer Street	Arsenic, Total	4.6	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW4IA	03/10/20	HMW-4IA-GW-20200310	800 Mercer Street	Arsenic, Total	6.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW5IB	03/17/20	HMW-5IB-GW-20200317	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW6D	03/16/20	HMW-6D-GW-20200316	800 Mercer Street	Arsenic, Total	5.5	ug/L		Yes; turbidity <= 50 NTU
HC	HMW6IA	03/13/20	HMW-6IA-GW-20200313	800 Mercer Street	Arsenic, Total	7.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW6IB	03/13/20	HMW-6IB-GW-20200313	800 Mercer Street	Arsenic, Total	8.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW7IB	03/12/20	HMW-7IB-GW-20200312	800 Mercer Street	Arsenic, Total	6.4	ug/L		Yes; turbidity <= 50 NTU
HC	HMW8IB	03/11/20	HMW-8IB-GW-20200311	800 Mercer Street	Arsenic, Dissolved	9.67	ug/L		No; used paired total result since it is higher
HC	HMW8IB	03/11/20	HMW-8IB-GW-20200311	800 Mercer Street	Arsenic, Total	10.7	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9D	03/17/20	HMW-9D-GW-20200317	800 Mercer Street	Arsenic, Total	8.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9IA	03/19/20	HMW-9IA-GW-20200319	800 Mercer Street	Arsenic, Total	3.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9IB	03/19/20	HMW-9IB-GW-20200319	800 Mercer Street	Arsenic, Total	2.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9S	03/17/20	HMW-9S-GW-20200317	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
EIM	WELL_1	02/01/11	WELL_1	IRIS Site "background"	Arsenic, Total	8.8	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	04/15/11	WELL_1	IRIS Site "background"	Arsenic, Total	5.5	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	07/22/11	WELL_1	IRIS Site "background"	Arsenic, Total	5	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	10/21/11	WELL_1	IRIS Site "background"	Arsenic, Total	4.9	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	02/01/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	3.6	ug/L		Yes
EIM	WELL_1	04/15/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	2.1	ug/L		Yes

Table E-2 - Arsenic for Statistics

Data provider	Location ID	Field Collection Start Date	Sample ID	Subfacility code	Result Parameter Name	Result Value	Result Value Units	lab qualifications	Use?
EIM	WELL_1	07/22/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	4.6	ug/L		Yes
EIM	WELL_1	10/21/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	0.1	ug/L	U	Yes
EIM	WELL_101	02/01/11	WELL_101	IRIS Site "background"	Arsenic, Total	6.2	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	04/15/11	WELL_101	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	07/22/11	WELL_101	IRIS Site "background"	Arsenic, Total	14	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	10/21/11	WELL_101	IRIS Site "background"	Arsenic, Total	6.1	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	02/01/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	0.1	ug/L	U	Yes
EIM	WELL_101	04/15/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	3.5	ug/L		Yes
EIM	WELL_101	07/22/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	7.6	ug/L		Yes
EIM	WELL_101	10/21/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	2.5	ug/L		Yes
EIM	WELL_2	02/01/11	WELL_2	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	04/15/11	WELL_2	IRIS Site "background"	Arsenic, Total	9.8	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	07/22/11	WELL_2	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	10/21/11	WELL_2	IRIS Site "background"	Arsenic, Total	8.9	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	02/01/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	6.0	ug/L		Yes
EIM	WELL_2	04/15/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	6.2	ug/L		Yes
EIM	WELL_2	07/22/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	9.3	ug/L		Yes
EIM	WELL_2	10/21/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	2.6	ug/L		Yes

## **ATTACHMENT E3**

Background calculations

0.12 HMW10S **As in Mercer Parcel Site Groundwater**

0.12 HMW11B

0.12 HMW2S

0.12 HMW5B

0.12 HMW9S

1.57 HMW17S

1.75 HMW12D

1.97 HMW19S

2.04 HMW20S

2.07 HMW9IB

2.58 HMW18S

3 HMW9IA

4.14 HMW11S

4.4 HMW20IA

4.57 HMW3IA

4.69 HMW3D

5.1 HMW2IA

5.22 HMW10D

5.47 HMW13D

5.53 HMW6D

6.03 HMW4IA

6.05 HMW14D

6.36 HMW2D

6.36 HMW7IB

7.78 HMW15IB

7.84 HMW6IA

7.95 HMW9D

8.21 HMW16IB

8.55 HMW6IB

10.7 HMW8IB

12.3 HMW1S

		MTCASat3.0			
Number of samples				Uncensored values	
	Uncensored	31		Mean	4.61
	Censored	0		Lognormal mean	7.74
	TOTAL	31		Std. devn.	3.24
				Median	4.69
				Min.	0.12
				Max.	12.3
Lognormal distribution?				Normal distribution?	
r-squared is: 0.76				r-squared is: 0.96	
Recommendations:					
Use normal distribution.					
Distribution selection		Enter percentile		Value corresponding to that percentile is:	
	2	80.00		7.46	
1 = Lognormal		50th		4.61	
2 = Normal		4 X 50th		18.43	
3 = Nonparametric method		Coefficient of Variation = 0.74			

Background calculations

0.12 HMW10S **As in Mercer Parcel Site Groundwater**

0.12 HMW11B

0.12 HMW2S

0.12 HMW5B

0.12 HMW9S

1.57 HMW17S

1.75 HMW12D

1.97 HMW19S

2.04 HMW20S

2.07 HMW9IB

2.58 HMW18S

3 HMW9IA

4.14 HMW11S

4.4 HMW20IA

4.57 HMW3IA

4.69 HMW3D

5.1 HMW2IA

5.22 HMW10D

5.47 HMW13D

5.53 HMW6D

6.03 HMW4IA

6.05 HMW14D

6.36 HMW2D

6.36 HMW7IB

7.78 HMW15IB

7.84 HMW6IA

7.95 HMW9D

8.21 HMW16IB

8.55 HMW6IB

10.7 HMW8IB

12.3 HMW1S

		MTCA Stat 3.0			
Number of samples				Uncensored values	
	Uncensored	31		Mean	4.61
	Censored	0		Lognormal mean	7.74
	TOTAL	31		Std. devn.	3.24
				Median	4.69
				Min.	0.12
				Max.	12.3
Lognormal distribution?				Normal distribution?	
r-squared is: 0.76				r-squared is: 0.96	
Recommendations:					
Use normal distribution.					
Distribution selection				Value corresponding to that percentile is:	
	2	Enter percentile		90.00	8.95
1 = Lognormal				50th	4.61
2 = Normal				4 X 50th	18.43
3 = Nonparametric method				Coefficient of Variation = 0.74	

Background calculations

0.12 WELL\_1 **As in IRIS Site Groundwater**

0.12 WELL\_101

2.1 WELL\_1

2.5 WELL\_101

2.6 WELL\_2

3.5 WELL\_101

3.6 WELL\_1

4.6 WELL\_1

6 WELL\_2

6.2 WELL\_2

7.6 WELL\_101

9.3 WELL\_2

		MTCASat3.0			
Number of samples				Uncensored values	
	Uncensored	12		Mean	4.02
	Censored	0		Lognormal mean	6.90
	TOTAL	12		Std. devn.	2.84
				Median	3.55
				Min.	0.12
				Max.	9.3
Lognormal distribution?				Normal distribution?	
r-squared is: 0.75				r-squared is: 0.97	
Recommendations:					
Use normal distribution.					
Distribution selection		Enter percentile		Value corresponding to that percentile is:	
	2	80.00		6.58	
	1 = Lognormal	50th		4.02	
	2 = Normal	4 X 50th		16.08	
	3 = Nonparametric method	Coefficient of Variation = 0.76			

Background calculations

0.12 WELL\_1 **As in IRIS Site Groundwater**

0.12 WELL\_101

2.1 WELL\_1

2.5 WELL\_101

2.6 WELL\_2

3.5 WELL\_101

3.6 WELL\_1

4.6 WELL\_1

6 WELL\_2

6.2 WELL\_2

7.6 WELL\_101

9.3 WELL\_2

		MTCASat3.0			
Number of samples				Uncensored values	
	Uncensored	12		Mean	4.02
	Censored	0		Lognormal mean	6.90
	TOTAL	12		Std. devn.	2.84
				Median	3.55
				Min.	0.12
				Max.	9.3
Lognormal distribution?				Normal distribution?	
r-squared is: 0.75				r-squared is: 0.97	
Recommendations:					
Use normal distribution.					
Distribution selection		Enter percentile		Value corresponding to that percentile is:	
	2	90.00		7.92	
	1 = Lognormal		50th	4.02	
	2 = Normal		4 X 50th	16.08	
	3 = Nonparametric method		Coefficient of Variation = 0.76		

Background calculations

0.12 HMW10S **As in Mercer Parcels & IRIS Site groundwater combined**

0.12 HMW11B

0.12 HMW2S

0.12 HMW5B

0.12 HMW9S

0.12 WELL\_1

0.12 WELL\_101

1.57 HMW17S

1.75 HMW12D

1.97 HMW19S

2.04 HMW20S

2.07 HMW9B

2.1 WELL\_1

2.5 WELL\_101

2.58 HMW18S

2.6 WELL\_2

3 HMW9IA

3.5 WELL\_101

3.6 WELL\_1

4.14 HMW11S

4.4 HMW20IA

4.57 HMW3IA

4.6 WELL\_1

4.69 HMW3D

5.1 HMW2IA

5.22 HMW10D

5.47 HMW13D

5.53 HMW6D

6 WELL\_2

6.03 HMW4IA

6.05 HMW14D

6.2 WELL\_2

6.36 HMW2D

6.36 HMW7B

7.6 WELL\_101

7.78 HMW15B

7.84 HMW6IA

7.95 HMW9D

8.21 HMW16B

8.55 HMW6B

9.3 WELL\_2

10.7 HMW8B

12.3 HMW1S

		MTCASat3.0		
Number of samples		Uncensored values		
	Uncensored	43	Mean	4.44
	Censored	0	Lognormal mean	7.31
	TOTAL	43	Std. devn.	3.11
			Median	4.57
			Min.	0.12
			Max.	12.3
Lognormal distribution?		Normal distribution?		
r-squared is: 0.76		r-squared is: 0.96		
Recommendations:				
Use normal distribution.				
Distribution selection		Value corresponding to that percentile is:		
	2	Enter percentile	80.00	7.16
1 = Lognormal			50th	4.44
2 = Normal			4 X 50th	17.77
3 = Nonparametric method			Coefficient of Variation = 0.73	

Background calculations

0.12 HMW10S **As in Mercer Parcels & IRIS Site groundwater combined**

0.12 HMW11B

0.12 HMW2S

0.12 HMW5B

0.12 HMW9S

0.12 WELL\_1

0.12 WELL\_101

1.57 HMW17S

1.75 HMW12D

1.97 HMW19S

2.04 HMW20S

2.07 HMW9B

2.1 WELL\_1

2.5 WELL\_101

2.58 HMW18S

2.6 WELL\_2

3 HMW9IA

3.5 WELL\_101

3.6 WELL\_1

4.14 HMW11S

4.4 HMW20IA

4.57 HMW3IA

4.6 WELL\_1

4.69 HMW3D

5.1 HMW2IA

5.22 HMW10D

5.47 HMW13D

5.53 HMW6D

6 WELL\_2

6.03 HMW4IA

6.05 HMW14D

6.2 WELL\_2

6.36 HMW2D

6.36 HMW7B

7.6 WELL\_101

7.78 HMW15B

7.84 HMW6IA

7.95 HMW9D

8.21 HMW16B

8.55 HMW6B

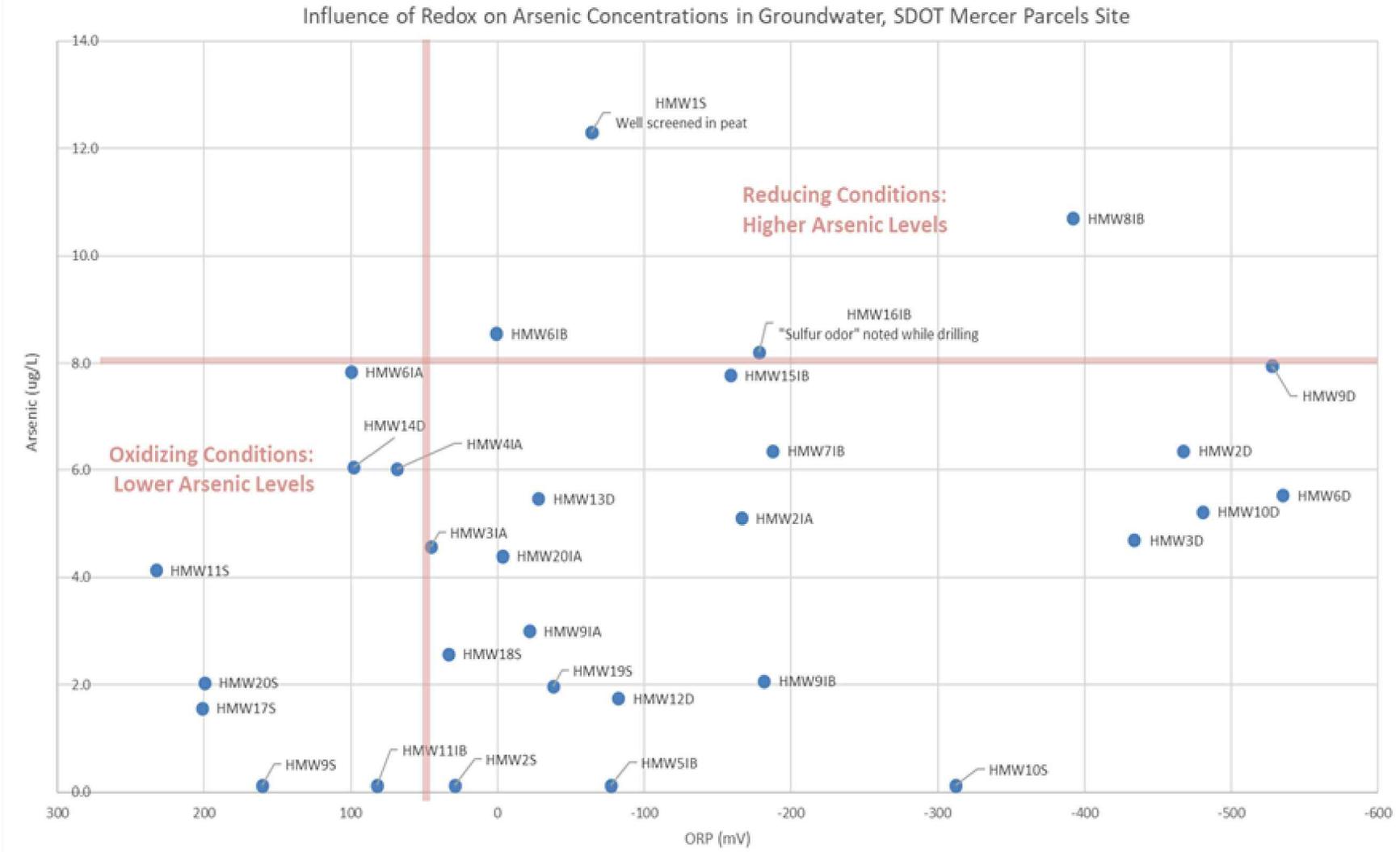
9.3 WELL\_2

10.7 HMW8B

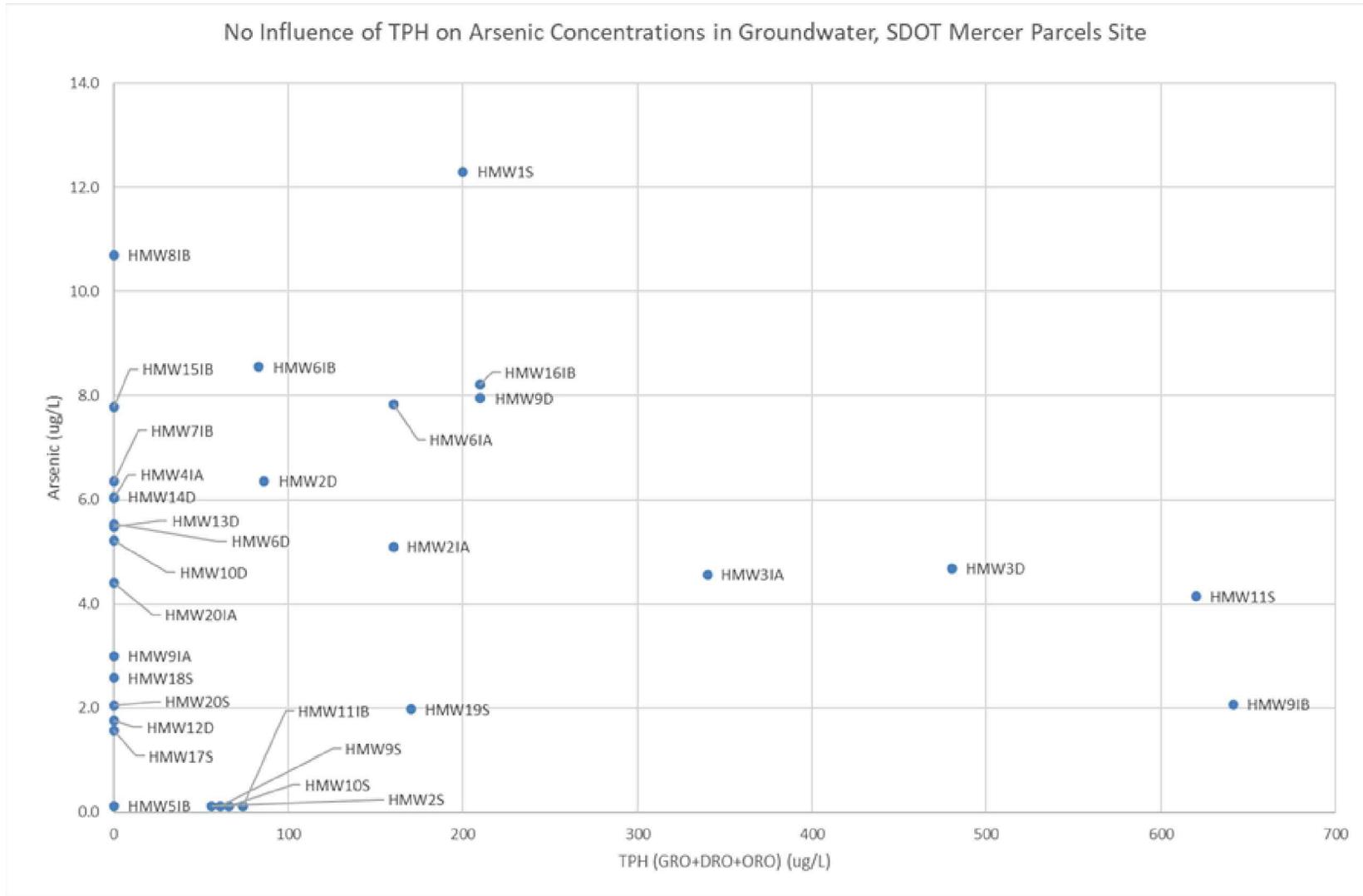
12.3 HMW1S

		MTCASat3.0			
Number of samples				Uncensored values	
	Uncensored	43		Mean	4.44
	Censored	0		Lognormal mean	7.31
	TOTAL	43		Std. devn.	3.11
				Median	4.57
				Min.	0.12
				Max.	12.3
Lognormal distribution?				Normal distribution?	
r-squared is: 0.76				r-squared is: 0.96	
Recommendations:					
Use normal distribution.					
Distribution selection		Enter percentile		Value corresponding to that percentile is:	
	2	90.00	8.59		
	1 = Lognormal		50th	4.44	
	2 = Normal		4 X 50th	17.77	
	3 = Nonparametric method		Coefficient of Variation = 0.73		

## FIGURES



Seattle DOT Mercer Parcels Site Seattle, Washington	
<b>Arsenic versus ORP in Groundwater</b>	
19409-04	07/21
 <small>A Division of Haley &amp; Aldrich</small>	FIGURE <b>E-a</b>



Seattle DOT Mercer Parcels Site Seattle, Washington	
<b>Arsenic versus TPH in Groundwater</b>	
19409-04	07/21
 A Division of Haley & Aldrich	FIGURE <b>E-b</b>