Appendices

Appendix A
O&M Laboratory Analytical Reports

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 27, 2020

Jeff Gaarder
GHD
2055 Niagara Falls
Boulevard Suite #3
Niagara Falls, NY 14304

RE: Project: 70496
Pace Project No.: 10505742

Dear Jeff Gaarder:
Enclosed are the analytical results for sample(s) received by the laboratory on January 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jenni Gross

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Eric Maise, GHD Services Inc.
Christina McClelland, GHD Services, Inc.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 70496
Pace Project No.: 10505742

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 70496
Pace Project No.: 10505742

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10505742001	**A-011620-JRL-INF**	Air	01/16/20 11:30	01/17/20 09:55
10505742002	**A-011620-JRL-EFF**	Air	01/16/20 11:25	01/17/20 09:55
10505742003	**A-011620-JRL-INF Cert 1462**	Air	01/16/20 11:30	01/17/20 09:55
10505742004	**A-011620-JRL-EFF Cert 2988**	Air	01/16/20 11:25	01/17/20 09:55

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
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SAMPLE ANALYTE COUNT

Project: 70496
Pace Project No.: 10505742

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10505742001	**A-011620-JRL-INF**	TO-15	MJL	6	PASI-M
10505742002	**A-011620-JRL-EFF**	TO-15	MJL	6	PASI-M
10505742003	**A-011620-JRL-INF Cert 1462**	TO-15	CH1	5	PASI-M
10505742004	**A-011620-JRL-EFF Cert 2988**	TO-15	CH1	5	PASI-M

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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10505742

Sample: A-011620-JRL-INF **Lab ID: 10505742001** Collected: 01/16/20 11:30 Received: 01/17/20 09:55 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Benzene	**174**	ppbv	3.9	38.98		01/25/20 15:55	71-43-2	
Ethylbenzene	**33.8**	ppbv	7.8	38.98		01/25/20 15:55	100-41-4	
THC as Gas	**5690**	ppbv	932	38.98		01/25/20 15:55		
Toluene	**175**	ppbv	7.8	38.98		01/25/20 15:55	108-88-3	
m&p-Xylene	**177**	ppbv	15.6	38.98		01/25/20 15:55	179601-23-1	
o-Xylene	**46.8**	ppbv	7.8	38.98		01/25/20 15:55	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10505742

Sample: A-011620-JRL-EFF **Lab ID: 10505742002** Collected: 01/16/20 11:25 Received: 01/17/20 09:55 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Benzene	**0.29**	ppbv	0.17	1.68		01/25/20 02:41	71-43-2	
Ethylbenzene	ND	ppbv	0.34	1.68		01/25/20 02:41	100-41-4	
THC as Gas	ND	ppbv	40.2	1.68		01/25/20 02:41		
Toluene	**0.49**	ppbv	0.34	1.68		01/25/20 02:41	108-88-3	
m&p-Xylene	**0.81**	ppbv	0.67	1.68		01/25/20 02:41	179601-23-1	
o-Xylene	ND	ppbv	0.34	1.68		01/25/20 02:41	95-47-6	

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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10505742

Sample: A-011620-JRL-INF Cert 1462 **Lab ID: 10505742003** Collected: 01/16/20 11:30 Received: 01/17/20 09:55 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15							
Benzene	ND	ug/m3	0.32	1		12/19/19 09:33	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		12/19/19 09:33	100-41-4	
Toluene	ND	ug/m3	0.77	1		12/19/19 09:33	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		12/19/19 09:33	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		12/19/19 09:33	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10505742

Sample: A-011620-JRL-EFF Cert 2988 **Lab ID: 10505742004** Collected: 01/16/20 11:25 Received: 01/17/20 09:55 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15							
Benzene	ND	ug/m3	0.32	1		11/25/19 10:17	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		11/25/19 10:17	100-41-4	
Toluene	ND	ug/m3	0.77	1		11/25/19 10:17	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		11/25/19 10:17	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		11/25/19 10:17	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 70496
Pace Project No.: 10505742

QC Batch: 656491 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10505742002

METHOD BLANK: 3526591 Matrix: Air
Associated Lab Samples: 10505742002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.10	01/24/20 14:11	
Ethylbenzene	ppbv	ND	0.20	01/24/20 14:11	
m&p-Xylene	ppbv	ND	0.40	01/24/20 14:11	
o-Xylene	ppbv	ND	0.20	01/24/20 14:11	
THC as Gas	ppbv	ND	23.9	01/24/20 14:11	
Toluene	ppbv	ND	0.20	01/24/20 14:11	

LABORATORY CONTROL SAMPLE: 3526592

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10.6	9.8	93	70-133	
Ethylbenzene	ppbv	10.5	10.7	102	70-142	
m&p-Xylene	ppbv	10.4	10.9	104	70-141	
o-Xylene	ppbv	10.5	10.9	104	70-135	
THC as Gas	ppbv	933	1080	115	66-145	
Toluene	ppbv	10.6	10.4	99	70-136	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496
Pace Project No.: 10505742

QC Batch: 656574 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10505742001

METHOD BLANK: 3527025 Matrix: Air
Associated Lab Samples: 10505742001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.050	01/25/20 09:01	
Ethylbenzene	ppbv	ND	0.10	01/25/20 09:01	
m&p-Xylene	ppbv	ND	0.20	01/25/20 09:01	
o-Xylene	ppbv	ND	0.10	01/25/20 09:01	
THC as Gas	ppbv	ND	12.0	01/25/20 09:01	
Toluene	ppbv	ND	0.10	01/25/20 09:01	

LABORATORY CONTROL SAMPLE: 3527026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10	10.2	102	70-133	
Ethylbenzene	ppbv	10	11.2	112	70-142	
m&p-Xylene	ppbv	20	22.7	114	70-141	
o-Xylene	ppbv	10	11.7	117	70-135	
THC as Gas	ppbv	1120	1080	96	66-145	
Toluene	ppbv	10	10.9	109	70-136	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 70496
Pace Project No.: 10505742

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496
Pace Project No.: 10505742

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10505742001	**A-011620-JRL-INF**	TO-15	656574		
10505742002	**A-011620-JRL-EFF**	TO-15	656491		
10505742003	**A-011620-JRL-INF Cert 1462**	TO-15	655521		
10505742004	**A-011620-JRL-EFF Cert 2988**	TO-15	655521		

WO# : 10505742

10505742

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed acc

Page : 1 Of 1

Section A
Required Client Information:

Company: GHD Services, Inc.
Address: 20818 44th Avenue West, Suite 190
Lynnwood, WA 98036
Email To: jeff.gaarder@ghd.com, christina.mcclelland@ghd.com
Phone: (425)563-6502 Fax:
Requested Due Date/TAT: Standard

Section B
Required Project Information:

Report To: Jeff Gaarder
Copy To: Christina McClelland
Purchase Order No.:
Client Project ID: 70496
Container Order Number:

Section C
Invoice Information:

Attention: Jeff Gaarder
Company Name: GHD Services, Inc.
Address: 2055 Niagara Falls Boulevard Suite #3, Niagara Falls, New York, 14304
Pace Quote Reference:
Pace Project Manager: Jennifer Gross
Pace Profile #:

Regulatory Agency
State / Location

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Gx (TPHg)	BTEX (TO-15)	Residual Chlorine (Y/N)	
1	A- 011620 -JRL -INF	OT	G	01/16/20	1130				1	X									X	X		CoN # 1462 001,003
2	A- 011620 -JRL -EFF	OT	G	01/16/20	1175				1	X									X	X		CoN # 2988 002,004
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	GHD	1/16/20	1200		1/16	1200	
		1/16/20	1700	PACE	1/17/20	955	

P - GW MONTHLY

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: JOE LEWANDOWSKI
SIGNATURE of SAMPLER:
DATE Signed: 01-16-20

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Y	N	Y

Pace Analytical®	Document Name: Air Sample Condition Upon Receipt	Document Revised: 19Nov2019 Page 1 of 1
	Document No.: F-MN-A-106-rev.20	Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt **Client Name:** GHD **Project #:** WO#: 10505742

PM: JMG Due Date: 01/31/20

CLIENT: GHD_WA

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exception** ☐

Tracking Number: 4934 3734 3155

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other:_____ **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermometer Used:** ☐ G87A9170600254 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 1/17/20 CM

Type of ice Received ☐ Blue ☐ Wet ☒ None

		Comments:
Chain of Custody Present?	☒ Yes ☐ No	1.
Chain of Custody Filled Out?	☒ Yes ☐ No	2.
Chain of Custody Relinquished?	☒ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	6.
Rush Turn Around Time Requested?	☐ Yes ☒ No	7.
Sufficient Volume?	☒ Yes ☐ No	8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-14, TO-15 or APH)** -Pace Containers Used?	☒ Yes ☐ No ☒ Yes ☐ No	9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	☒ Yes ☐ No	10.
Media: Air Can Airbag Filter TDT Passive		11. Individually Certified Cans (Y) N (list which samples) STAND ALONE GAUGES
Is sufficient information available to reconcile samples to the COC?	☒ Yes ☐ No	12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☒ Yes ☐ No	13.

Gauge # ☒ 10AIR26 ☐ 10AIR34 ☐ 10AIR35 ☐ 4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
INF	1462	—	-1	-10					
EFF	2988	—	0	-10					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross **Date:** 01/17/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: GHD Services Inc
Phone: 734-453-5123

Lab Project Number: 10505742
Project Name: 70496

Lab Sample No: 10505742001 ProjSampleNum: 10505742001 Date Collected: 01/16/20 11:30
Client Sample ID: A-011620-JRL-INF Matrix: Air Date Received: 01/17/20 9:55

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	3.9	174	12.7	565	38.98	01/25/20 15:55 MJL	71-43-2
Ethylbenzene	7.8	33.8	34.4	149	38.98	01/25/20 15:55 MJL	100-41-4
m&p-Xylene	15.6	177	68.9	781	38.98	01/25/20 15:55 MJL	179601-23-1
o-Xylene	7.8	46.8	34.4	207	38.98	01/25/20 15:55 MJL	95-47-6
THC as Gas	932	5690	4050	24700	38.98	01/25/20 15:55 MJL	
Toluene	7.8	175	29.9	670	38.98	01/25/20 15:55 MJL	108-88-3

Lab Sample No: 10505742002 ProjSampleNum: 10505742002 Date Collected: 01/16/20 11:25
Client Sample ID: A-011620-JRL-EFF Matrix: Air Date Received: 01/17/20 9:55

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	0.17	0.29	0.55	0.94	1.68	01/25/20 2:41 MJL	71-43-2
Ethylbenzene	0.34	ND	1.5	ND	1.68	01/25/20 2:41 MJL	100-41-4
m&p-Xylene	0.67	0.81	3	3.6	1.68	01/25/20 2:41 MJL	179601-23-1
o-Xylene	0.34	ND	1.5	ND	1.68	01/25/20 2:41 MJL	95-47-6
THC as Gas	40.2	ND	174	ND	1.68	01/25/20 2:41 MJL	
Toluene	0.34	0.49	1.3	1.9	1.68	01/25/20 2:41 MJL	108-88-3

SUPPLEMENTAL REPORT

Units Conversion Request

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 22, 2020

Christina McClelland
GHD Services, Inc.
20818 44th Ave W
Suite 190
Lynnwood, WA 98036

RE: Project: 70496.17
Pace Project No.: 10505703

Dear Christina McClelland:
Enclosed are the analytical results for sample(s) received by the laboratory on January 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Joe Lewandowski, GHD
Eric Maise, GHD Services Inc.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 70496.17
Pace Project No.: 10505703

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 70496.17
Pace Project No.: 10505703

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10505703001	**GW-011620-JRL-INF 1**	Water	01/16/20 11:15	01/17/20 08:45
10505703002	**GW-011620-JRL-INF 2**	Water	01/16/20 11:00	01/17/20 08:45
10505703003	**GW-011620-JRL-MID 1**	Water	01/16/20 10:45	01/17/20 08:45
10505703004	**GW-011620-JRL-MID 2**	Water	01/16/20 10:30	01/17/20 08:45
10505703005	**GW-011620-JRL-Total EFF**	Water	01/16/20 09:30	01/17/20 08:45
10505703006	**GW-011620-JRL-Total EFF 1**	Water	01/16/20 09:30	01/17/20 08:45
10505703007	**GW-011620-JRL-Total EFF 2**	Water	01/16/20 09:45	01/17/20 08:45
10505703008	**GW-011620-JRL-Total EFF 3**	Water	01/16/20 10:00	01/17/20 08:45
10505703009	**GW-011620-JRL-Total EFF 4**	Water	01/16/20 10:15	01/17/20 08:45
10505703010	**GW-011620-JRL-Total EFF 5**	Water	01/16/20 09:30	01/17/20 08:45
10505703011	**GW-011620-JRL-Total EFF 6**	Water	01/16/20 09:45	01/17/20 08:45
10505703012	**GW-011620-JRL-Total EFF 7**	Water	01/16/20 10:00	01/17/20 08:45
10505703013	**Trip Blank**	Water	01/16/20 00:00	01/17/20 08:45
10505703014	**GW-011620-JRL-Total EFF 1-4**	Water	01/16/20 10:15	01/17/20 08:45
10505703015	**GW-011620-JRL-Total EFF 5-7**	Water	01/16/20 10:00	01/17/20 08:45

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SAMPLE ANALYTE COUNT

Project: 70496.17
Pace Project No.: 10505703

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10505703001	**GW-011620-JRL-INF 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703002	**GW-011620-JRL-INF 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703003	**GW-011620-JRL-MID 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703004	**GW-011620-JRL-MID 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703005	**GW-011620-JRL-Total EFF**	NWTPH-Dx	JVM	4	PASI-M
10505703013	**Trip Blank**	NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703014	**GW-011620-JRL-Total EFF 1-4**	NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10505703015	**GW-011620-JRL-Total EFF 5-7**	EPA 1664B OG	JER	1	PASI-M

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-INF 1 **Lab ID: 10505703001** Collected: 01/16/20 11:15 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**6520**	ug/L	400	1	01/17/20 17:09	01/20/20 13:51	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	01/17/20 17:09	01/20/20 13:51	64742-65-0	P2
Surrogates								
o-Terphenyl (S)	62	%.	50-150	1	01/17/20 17:09	01/20/20 13:51	84-15-1	
n-Triacontane (S)	67	%.	50-150	1	01/17/20 17:09	01/20/20 13:51	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**181000**	ug/L	10000	100		01/21/20 16:35		G-
Surrogates								
a,a,a-Trifluorotoluene (S)	90	%.	50-150	100		01/21/20 16:35	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**23100**	ug/L	100	100		01/19/20 20:57	71-43-2	
Ethylbenzene	**1380**	ug/L	100	100		01/19/20 20:57	100-41-4	
Toluene	**30300**	ug/L	200	200		01/20/20 18:54	108-88-3	
Xylene (Total)	**15700**	ug/L	300	100		01/19/20 20:57	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	100		01/19/20 20:57	17060-07-0	
Toluene-d8 (S)	106	%.	75-125	100		01/19/20 20:57	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	100		01/19/20 20:57	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-INF 2 **Lab ID: 10505703002** Collected: 01/16/20 11:00 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**2450**	ug/L	392	1	01/21/20 15:06	01/22/20 08:37	68334-30-5	
Motor Oil Range SG	ND	ug/L	392	1	01/21/20 15:06	01/22/20 08:37	64742-65-0	
Surrogates								
o-Terphenyl (S)	83	%.	50-150	1	01/21/20 15:06	01/22/20 08:37	84-15-1	
n-Triacontane (S)	83	%.	50-150	1	01/21/20 15:06	01/22/20 08:37	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**2320**	ug/L	100	1		01/20/20 16:39		G+,G-
Surrogates								
a,a,a-Trifluorotoluene (S)	93	%.	50-150	1		01/20/20 16:39	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**179**	ug/L	1.0	1		01/19/20 20:06	71-43-2	
Ethylbenzene	**5.3**	ug/L	1.0	1		01/19/20 20:06	100-41-4	
Toluene	**149**	ug/L	1.0	1		01/19/20 20:06	108-88-3	
Xylene (Total)	**253**	ug/L	3.0	1		01/19/20 20:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%.	75-125	1		01/19/20 20:06	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		01/19/20 20:06	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		01/19/20 20:06	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-MID 1 **Lab ID: 10505703003** Collected: 01/16/20 10:45 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**770**	ug/L	417	1	01/21/20 15:06	01/22/20 08:48	68334-30-5	
Motor Oil Range SG	ND	ug/L	417	1	01/21/20 15:06	01/22/20 08:48	64742-65-0	
Surrogates								
o-Terphenyl (S)	83	%.	50-150	1	01/21/20 15:06	01/22/20 08:48	84-15-1	
n-Triacontane (S)	89	%.	50-150	1	01/21/20 15:06	01/22/20 08:48	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**431**	ug/L	100	1		01/20/20 16:05		
Surrogates								
a,a,a-Trifluorotoluene (S)	95	%.	50-150	1		01/20/20 16:05	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**67.1**	ug/L	1.0	1		01/19/20 20:23	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		01/19/20 20:23	100-41-4	
Toluene	**32.4**	ug/L	1.0	1		01/19/20 20:23	108-88-3	
Xylene (Total)	**50.1**	ug/L	3.0	1		01/19/20 20:23	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%.	75-125	1		01/19/20 20:23	17060-07-0	
Toluene-d8 (S)	101	%.	75-125	1		01/19/20 20:23	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		01/19/20 20:23	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-MID 2 **Lab ID: 10505703004** Collected: 01/16/20 10:30 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	01/21/20 15:06	01/22/20 08:59	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	01/21/20 15:06	01/22/20 08:59	64742-65-0	
Surrogates								
o-Terphenyl (S)	83	%.	50-150	1	01/21/20 15:06	01/22/20 08:59	84-15-1	
n-Triacontane (S)	90	%.	50-150	1	01/21/20 15:06	01/22/20 08:59	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		01/20/20 16:22		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%.	50-150	1		01/20/20 16:22	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**6.2**	ug/L	1.0	1		01/19/20 20:40	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		01/19/20 20:40	100-41-4	
Toluene	**1.2**	ug/L	1.0	1		01/19/20 20:40	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		01/19/20 20:40	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		01/19/20 20:40	17060-07-0	
Toluene-d8 (S)	102	%.	75-125	1		01/19/20 20:40	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125	1		01/19/20 20:40	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-Total EFF **Lab ID: 10505703005** Collected: 01/16/20 09:30 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	01/21/20 15:06	01/22/20 09:10	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	01/21/20 15:06	01/22/20 09:10	64742-65-0	
Surrogates								
o-Terphenyl (S)	70	%.	50-150	1	01/21/20 15:06	01/22/20 09:10	84-15-1	
n-Triacontane (S)	81	%.	50-150	1	01/21/20 15:06	01/22/20 09:10	638-68-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: Trip Blank **Lab ID: 10505703013** Collected: 01/16/20 00:00 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		01/20/20 18:04		
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%.	50-150	1		01/20/20 18:04	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		01/19/20 19:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		01/19/20 19:32	100-41-4	
Toluene	ND	ug/L	1.0	1		01/19/20 19:32	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		01/19/20 19:32	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		01/19/20 19:32	17060-07-0	
Toluene-d8 (S)	104	%.	75-125	1		01/19/20 19:32	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		01/19/20 19:32	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-Total EFF 1-4 **Lab ID: 10505703014** Collected: 01/16/20 10:15 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		01/20/20 15:30		
Surrogates								
a,a,a-Trifluorotoluene (S)	98	%.	50-150	1		01/20/20 15:30	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		01/19/20 19:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		01/19/20 19:49	100-41-4	
Toluene	ND	ug/L	1.0	1		01/19/20 19:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		01/19/20 19:49	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		01/19/20 19:49	17060-07-0	
Toluene-d8 (S)	103	%.	75-125	1		01/19/20 19:49	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125	1		01/19/20 19:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10505703

Sample: GW-011620-JRL-Total EFF 5-7 **Lab ID: 10505703015** Collected: 01/16/20 10:00 Received: 01/17/20 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664B HEM, Oil and Grease	Analytical Method: EPA 1664B OG							
Oil and Grease	ND	ug/L	6760	1		01/21/20 08:44		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655487 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10505703002, 10505703003, 10505703004, 10505703013, 10505703014

METHOD BLANK: 3522408 Matrix: Water
Associated Lab Samples: 10505703002, 10505703003, 10505703004, 10505703013, 10505703014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	01/20/20 13:36	
a,a,a-Trifluorotoluene (S)	%.	94	50-150	01/20/20 13:36	

LABORATORY CONTROL SAMPLE & LCSD: 3522409 3522410

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1050	978	105	98	72-130	7	20	
a,a,a-Trifluorotoluene (S)	%.				102	101	50-150			

SAMPLE DUPLICATE: 3522701

Parameter	Units	10505703014 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	98	99			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655815 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10505703001

METHOD BLANK: 3523591 Matrix: Water
Associated Lab Samples: 10505703001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	01/21/20 13:56	
a,a,a-Trifluorotoluene (S)	%.	96	50-150	01/21/20 13:56	

LABORATORY CONTROL SAMPLE & LCSD: 3523592 3523593

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	946	955	95	96	72-130	1	20	
a,a,a-Trifluorotoluene (S)	%.				103	101	50-150			

SAMPLE DUPLICATE: 3523594

Parameter	Units	10505703001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	181000	183000	1	30	G-
a,a,a-Trifluorotoluene (S)	%.	90	99			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655416 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10505703001, 10505703002, 10505703003, 10505703004, 10505703013, 10505703014

METHOD BLANK: 3522224 Matrix: Water
Associated Lab Samples: 10505703001, 10505703002, 10505703003, 10505703004, 10505703013, 10505703014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	01/19/20 19:15	
Ethylbenzene	ug/L	ND	1.0	01/19/20 19:15	
Toluene	ug/L	ND	1.0	01/19/20 19:15	
Xylene (Total)	ug/L	ND	3.0	01/19/20 19:15	
1,2-Dichloroethane-d4 (S)	%.	97	75-125	01/19/20 19:15	
4-Bromofluorobenzene (S)	%.	100	75-125	01/19/20 19:15	
Toluene-d8 (S)	%.	104	75-125	01/19/20 19:15	

LABORATORY CONTROL SAMPLE: 3522225

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.7	83	75-125	
Ethylbenzene	ug/L	20	20.0	100	75-125	
Toluene	ug/L	20	20.0	100	75-125	
Xylene (Total)	ug/L	60	62.0	103	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			108	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3522226 3522227

Parameter	Units	10505703014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	16.8	17.4	83	86	63-125	3	30	
Ethylbenzene	ug/L	ND	20	20	19.6	21.2	98	106	66-128	8	30	
Toluene	ug/L	ND	20	20	19.3	20.5	96	102	64-125	6	30	
Xylene (Total)	ug/L	ND	60	60	60.3	64.7	101	108	64-131	7	30	
1,2-Dichloroethane-d4 (S)	%.						98	97	75-125			
4-Bromofluorobenzene (S)	%.						97	98	75-125			
Toluene-d8 (S)	%.						107	108	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655329 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10505703001

METHOD BLANK: 3521934 Matrix: Water
Associated Lab Samples: 10505703001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	ug/L	ND	400	01/20/20 13:18	
Motor Oil Range SG	ug/L	ND	400	01/20/20 13:18	
n-Triacontane (S)	%.	58	50-150	01/20/20 13:18	
o-Terphenyl (S)	%.	47	50-150	01/20/20 13:18	S0

LABORATORY CONTROL SAMPLE & LCSD: 3521935 3521936

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	2000	1560	1670	78	83	50-150	7	20	
Motor Oil Range SG	ug/L	2000	1850	1820	93	91	50-150	2	20	
n-Triacontane (S)	%.				83	87	50-150			
o-Terphenyl (S)	%.				83	77	50-150			

SAMPLE DUPLICATE: 3521937

Parameter	Units	10505703001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	6520	5910	10	30	
Motor Oil Range SG	ug/L	ND	751		30	
n-Triacontane (S)	%.	67	72			
o-Terphenyl (S)	%.	62	85			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655868 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10505703002, 10505703003, 10505703004, 10505703005

METHOD BLANK: 3523754 Matrix: Water
Associated Lab Samples: 10505703002, 10505703003, 10505703004, 10505703005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	ug/L	ND	400	01/22/20 08:04	
Motor Oil Range SG	ug/L	ND	400	01/22/20 08:04	
n-Triacontane (S)	%.	83	50-150	01/22/20 08:04	
o-Terphenyl (S)	%.	79	50-150	01/22/20 08:04	

LABORATORY CONTROL SAMPLE & LCSD: 3523755 3523756

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	2000	1730	1740	86	87	50-150	1	20	
Motor Oil Range SG	ug/L	2000	1760	1820	88	91	50-150	3	20	
n-Triacontane (S)	%.				84	77	50-150			
o-Terphenyl (S)	%.				82	82	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10505703

QC Batch: 655488 Analysis Method: EPA 1664B OG
QC Batch Method: EPA 1664B OG Analysis Description: 1664B HEM, Oil and Grease
Associated Lab Samples: 10505703015

METHOD BLANK: 3522411 Matrix: Water
Associated Lab Samples: 10505703015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	ug/L	ND	5000	01/21/20 08:44	

LABORATORY CONTROL SAMPLE: 3522412

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	ug/L	40000	36800	92	78-114	

MATRIX SPIKE SAMPLE: 3522414

Parameter	Units	10505478001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	ug/L	921 mg/L	38100	956000	91	78-114	

SAMPLE DUPLICATE: 3522413

Parameter	Units	40201970001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	ug/L	<1.4 mg/L	ND		18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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QUALIFIERS

Project: 70496.17
Pace Project No.: 10505703

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 655488

[BE]	Batch extracted by solid phase extraction (SPE).

ANALYTE QUALIFIERS

G+	Late peaks present outside the GRO window.
G-	Early peaks present outside the GRO window.
P2	Re-extraction or re-analysis could not be performed due to insufficient sample amount.
S0	Surrogate recovery outside laboratory control limits.

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10505703

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV UST	Water	SW-846 8260B/5030B	N/A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10505703

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10505703001	**GW-011620-JRL-INF 1**	EPA Mod. 3510C	655329	NWTPH-Dx	655520
10505703002	**GW-011620-JRL-INF 2**	EPA Mod. 3510C	655868	NWTPH-Dx	655940
10505703003	**GW-011620-JRL-MID 1**	EPA Mod. 3510C	655868	NWTPH-Dx	655940
10505703004	**GW-011620-JRL-MID 2**	EPA Mod. 3510C	655868	NWTPH-Dx	655940
10505703005	**GW-011620-JRL-Total EFF**	EPA Mod. 3510C	655868	NWTPH-Dx	655940
10505703001	**GW-011620-JRL-INF 1**	NWTPH-Gx	655815		
10505703002	**GW-011620-JRL-INF 2**	NWTPH-Gx	655487		
10505703003	**GW-011620-JRL-MID 1**	NWTPH-Gx	655487		
10505703004	**GW-011620-JRL-MID 2**	NWTPH-Gx	655487		
10505703013	**Trip Blank**	NWTPH-Gx	655487		
10505703014	**GW-011620-JRL-Total EFF 1-4**	NWTPH-Gx	655487		
10505703001	**GW-011620-JRL-INF 1**	EPA 8260B	655416		
10505703002	**GW-011620-JRL-INF 2**	EPA 8260B	655416		
10505703003	**GW-011620-JRL-MID 1**	EPA 8260B	655416		
10505703004	**GW-011620-JRL-MID 2**	EPA 8260B	655416		
10505703013	**Trip Blank**	EPA 8260B	655416		
10505703014	**GW-011620-JRL-Total EFF 1-4**	EPA 8260B	655416		
10505703015	**GW-011620-JRL-Total EFF 5-7**	EPA 1664B OG	655488		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page : 1 Of 1

Section A — Required Client Information:

Company:	GHD Services, Inc.
Address:	20818 44th Avenue West, Suite 190, Lynnwood, WA 98036
Email To:	christina.mcclelland@ghd.com, eric.maise@ghd.com, thuan.bui@ghd.com
Phone:	(425)563-6502 Fax:
Requested Due Date/TAT:	Standard

Section B — Required Project Information:

Report To:	Christina McClelland
Copy To:	Eric Maise and Thuan Bui
Purchase Order No.	
Client Project ID:	70496.17
Container Order Number:	

Section C — Invoice Information:

Attention:	Christina McClelland
Company Name:	GHD Services, Inc.
Address:	2055 Niagara Falls Boulevard Suite #3, Niagara Falls, New York, 14304
Pace Quote Reference:	
Pace Project Manager:	Jennifer Gross
Pace Profile #:	

Regulatory Agency

State / Location

SAMPLE ID

One Character per box. (A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

WO#: 10505703

10505703

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	TPHd (NWTPH-Dx) with Silica Gel	TPHg (NWTPH-Gx)	BTEX (EPA 8260)	FOG 1664	Residual Chlorine (Y/N)	
1	GW- 011620 - JRL -INF 1	WT	G	01/14/20	1115				3				X						X	X	X			001
	GW- 011620 - JRL -INF 2	WT	G	"	1100				3				X						X	X	X			002
2	GW- 011620 - JRL -MID 1	WT	G		1045				3				X						X	X	X			003
3	GW- 011620 - JRL -MID 2	WT	G		1030				3				X						X	X	X			004
4	GW- 011620 - JRL -Total EFF	WT	G		0930				2				X						X					005
5	GW- 011620 - JRL -Total EFF 1	WT	G		0930				2				X							X	X			006
6	GW- 011620 - JRL -Total EFF 2	WT	G		0945				2				X							X	X			007
7	GW- 011620 - JRL -Total EFF 3	WT	G		1000				2				X							X	X			Composite EFF 1, 2, 3, 4 at lab 008 009 010
8	GW- 011620 - JRL -Total EFF 4	WT	G		1015				2				X							X	X			
9	GW- 011620 - JRL -Total EFF 5	WT	G		0930				1				X									X		011
10	GW- 011620 - JRL -Total EFF 6	WT	G		0945				1				X									X		Composite EFF 5, 6, 7 at lab 012
11	GW- 011620 - JRL -Total EFF 7	WT	G		1000				1				X									X		013

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
4 Trip Blanks CEG 1/17/2020	GHD	01/16/20	1200	Pace	1-16	1700
		1-16	1700	Pace	1/17/20	0845

SAMPLE CONDITIONS			
—	4	N	5
5.4	Y	Y	Y

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

GW MONTHLY

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI

SIGNATURE of SAMPLER:

DATE Signed: 01-16-20

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 14Nov2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.30**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: GHD

Project #: WO#: 10505703

PM: JMG Due Date: 01/30/20

CLIENT: GHD_WA

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Pace [ ] SpeeDee [ ] Commercial See Exceptions [ ]

Tracking Number: 4934 3734 3280

Custody Seal on Cooler/Box Present? [X] Yes [ ] No **Seals Intact?** [X] Yes [ ] No **Biological Tissue Frozen?** [ ] Yes [ ] No [X] N/A

Packing Material: [X] Bubble Wrap [X] Bubble Bags [ ] None [X] Other: PB **Temp Blank?** [X] Yes [ ] No

Thermometer: [ ] T1(0461) [ ] T2(1336) [X] T3(0459) [ ] T4(0254) [ ] T5(0489) **Type of Ice:** [X] Wet [ ] Blue [ ] None [ ] Dry [ ] Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	**Cooler Temp Read w/temp blank:** 5.2 °C	**Average Corrected Temp (no temp blank only):** [ ] See Exceptions
Correction Factor: +0.2	**Cooler Temp Corrected w/temp blank :** 5.4 °C	°C [ ] 1 Container

USDA Regulated Soil: ([X] N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** CEG 1/17/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? [ ] Yes [ ] No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? [ ] Yes [ ] No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	[X] Yes	[ ] No		1.
Chain of Custody Relinquished?	[X] Yes	[ ] No		2.
Sampler Name and/or Signature on COC?	[X] Yes	[ ] No	[ ] N/A	3.
Samples Arrived within Hold Time?	[X] Yes	[ ] No		4.
Short Hold Time Analysis (<72 hr)?	[ ] Yes	[X] No		5. [ ] Fecal Coliform [ ] HPC [ ] Total Coliform/E coli [ ] BOD/cBOD [ ] Hex Chrome [ ] Turbidity [ ] Nitrate [ ] Nitrite [ ] Orthophos [ ] Other_____
Rush Turn Around Time Requested?	[ ] Yes	[X] No		6.
Sufficient Volume?	[X] Yes	[ ] No		7.
Correct Containers Used? -Pace Containers Used?	[X] Yes [X] Yes	[ ] No [ ] No		8.
Containers Intact?	[X] Yes	[ ] No		9.
Field Filtered Volume Received for Dissolved Tests?	[ ] Yes	[ ] No	[X] N/A	10. Is sediment visible in the dissolved container? [ ] Yes [ ] No
Is sufficient information available to reconcile the samples to the COC? Matrix: [X] Water [ ] Soil [ ] Oil [ ] Other_____	[X] Yes	[ ] No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** [ ]
All containers needing acid/base preservation have been checked?	[ ] Yes	[ ] No	[X] N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	[ ] Yes	[ ] No	[X] N/A	[ ] NaOH [ ] HNO_3 [ ] H_2SO_4 [ ] Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	[X] Yes	[ ] No	[ ] N/A	Positive for Res. Chlorine? [ ] Yes [ ] No **pH Paper Lot#** **See Exception** [ ]
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	[ ] Yes	[ ] No	[X] N/A	13. **See Exception**
Headspace in VOA Vials (greater than 6mm)?	[ ] Yes	[X] No	[ ] N/A	Total EFF 1 1 VG9H less than 6 mm [ ]
Trip Blank Present?	[X] Yes	[ ] No	[ ] N/A	14.
Trip Blank Custody Seals Present?	[X] Yes	[ ] No	[ ] N/A	Pace Trip Blank Lot # (if purchased): 239190

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** [ ] Yes [ ] No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ Jenni Gross _____ **Date:** 01/17/20

Note: Whenever there is a discrepancy affecting compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: CEG

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 24, 2020

Jeff Gaarder
GHD
2055 Niagara Falls
Boulevard Suite #3
Niagara Falls, NY 14304

RE: Project: 70496
Pace Project No.: 10507892

Dear Jeff Gaarder:
Enclosed are the analytical results for sample(s) received by the laboratory on February 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Eric Maise, GHD Services Inc.
Christina McClelland, GHD Services, Inc.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 70496
Pace Project No.: 10507892

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 70496
Pace Project No.: 10507892

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10507892001	**A-020620-JRL-INF**	Air	02/06/20 11:45	02/10/20 09:15
10507892002	**A-020620-JRL-INF cert 3819**	Air	02/06/20 11:45	02/10/20 09:15
10507892003	**A-020620-JRL-EFF**	Air	02/06/20 11:40	02/10/20 09:15
10507892004	**A-020620-JRL-EFF cert 3781**	Air	02/06/20 11:40	02/10/20 09:15

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 70496
Pace Project No.: 10507892

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10507892001	**A-020620-JRL-INF**	TO-15	NCK	6	PASI-M
10507892002	**A-020620-JRL-INF cert 3819**	TO-15	CH1	5	PASI-M
10507892003	**A-020620-JRL-EFF**	TO-15	NCK	6	PASI-M
10507892004	**A-020620-JRL-EFF cert 3781**	TO-15	CH1	5	PASI-M

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10507892

Sample: A-020620-JRL-INF **Lab ID: 10507892001** Collected: 02/06/20 11:45 Received: 02/10/20 09:15 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Benzene	**133**	ppbv	3.6	36		02/20/20 14:48	71-43-2	
Ethylbenzene	**37.1**	ppbv	7.2	36		02/20/20 14:48	100-41-4	
THC as Gas	**7250**	ppbv	860	36		02/20/20 14:48		
Toluene	**206**	ppbv	7.2	36		02/20/20 14:48	108-88-3	
m&p-Xylene	**182**	ppbv	14.4	36		02/20/20 14:48	179601-23-1	
o-Xylene	**74.0**	ppbv	7.2	36		02/20/20 14:48	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10507892

Sample: A-020620-JRL-INF cert 3819 **Lab ID: 10507892002** Collected: 02/06/20 11:45 Received: 02/10/20 09:15 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15							
Benzene	ND	ug/m3	0.32	1		01/18/20 17:29	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		01/18/20 17:29	100-41-4	
Toluene	ND	ug/m3	0.77	1		01/18/20 17:29	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		01/18/20 17:29	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		01/18/20 17:29	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10507892

Sample: A-020620-JRL-EFF **Lab ID: 10507892003** Collected: 02/06/20 11:40 Received: 02/10/20 09:15 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Benzene	**0.30**	ppbv	0.18	1.77		02/20/20 13:50	71-43-2	
Ethylbenzene	ND	ppbv	0.35	1.77		02/20/20 13:50	100-41-4	
THC as Gas	**270**	ppbv	42.3	1.77		02/20/20 13:50		
Toluene	**0.48**	ppbv	0.35	1.77		02/20/20 13:50	108-88-3	
m&p-Xylene	ND	ppbv	0.71	1.77		02/20/20 13:50	179601-23-1	
o-Xylene	ND	ppbv	0.35	1.77		02/20/20 13:50	95-47-6	

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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10507892

Sample: A-020620-JRL-EFF cert 3781 **Lab ID: 10507892004** Collected: 02/06/20 11:40 Received: 02/10/20 09:15 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15							
Benzene	ND	ug/m3	0.32	1		01/18/20 17:00	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		01/18/20 17:00	100-41-4	
Toluene	ND	ug/m3	0.77	1		01/18/20 17:00	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		01/18/20 17:00	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		01/18/20 17:00	95-47-6	

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QUALITY CONTROL DATA

Project: 70496
Pace Project No.: 10507892

QC Batch: 661048 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR
Associated Lab Samples: 10507892001, 10507892003

METHOD BLANK: 3547533 Matrix: Air
Associated Lab Samples: 10507892001, 10507892003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.050	02/20/20 10:55	
Ethylbenzene	ppbv	ND	0.10	02/20/20 10:55	
m&p-Xylene	ppbv	ND	0.20	02/20/20 10:55	
o-Xylene	ppbv	ND	0.10	02/20/20 10:55	
THC as Gas	ppbv	ND	12.0	02/20/20 10:55	
Toluene	ppbv	ND	0.10	02/20/20 10:55	

LABORATORY CONTROL SAMPLE: 3547534

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10.3	10.0	97	70-133	
Ethylbenzene	ppbv	10.3	9.3	90	70-142	
m&p-Xylene	ppbv	20.7	17.9	87	70-141	
o-Xylene	ppbv	10.3	11.6	112	70-135	
THC as Gas	ppbv	1170	878	75	66-145	
Toluene	ppbv	10.3	9.9	96	70-136	

SAMPLE DUPLICATE: 3549266

Parameter	Units	10507892003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ppbv	0.30	0.33	11	25	
Ethylbenzene	ppbv	ND	ND		25	
m&p-Xylene	ppbv	ND	.44J		25	
o-Xylene	ppbv	ND	ND		25	
THC as Gas	ppbv	270	259	4	25	
Toluene	ppbv	0.48	0.54	12	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 70496
Pace Project No.: 10507892

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

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1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496
Pace Project No.: 10507892

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10507892001	**A-020620-JRL-INF**	TO-15	661048		
10507892003	**A-020620-JRL-EFF**	TO-15	661048		
10507892002	**A-020620-JRL-INF cert 3819**	TO-15	661617		
10507892004	**A-020620-JRL-EFF cert 3781**	TO-15	661617		

Pace Analytical

CHAIN-OF-CUSTODY / Ana

The Chain-of-Custody is a LEGAL DOCUM

WO# : 10507892

10507892

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services, Inc.	Report To:	Jeff Gaarder	Attention:	Jeff Gaarder
Address:	20818 44th Avenue West, Suite 190 Lynnwood, WA 98036	Copy To:	Christina McClelland	Company Name:	GHD Services, Inc.
				Address:	2055 Niagara Falls Boulevard Suite #3, Niagara Falls, New York, 14304
Email To:	jeff.gaarder@ghd.com, christina.mcclelland@ghd.com	Purchase Order No.		Pace Quote Reference:	
Phone:	(425)563-6502 Fax:	Client Project ID:	70496	Pace Project Manager:	Jennifer Gross
Requested Due Date/TAT:	Standard	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Gx (TPHg)	BTEX (TO-15)	Residual Chlorine (Y/N)	CANISTER #
1	A- 020620 - DUP-INF	OT	G	02/06/20	1145				1	X									X	X		3812
2	A- 020620 - DUP-EFF	OT	G	02/06/20	1140				1	X									X	X		3781
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

001, 002
003, 004

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	GHD	02/06/20	1200		2-6	1400	- T T Y
		2-6	178	RACE	2/10/20	915	- N Y Y

CW MONTHLY

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI

SIGNATURE of SAMPLER:

DATE Signed: 02-06-20

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical®	Document Name: Air Sample Condition Upon Receipt	Document Revised: 19Nov2019 Page 1 of 1
	Document No.: F-MN-A-106-rev.20	Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt **Client Name:** GHD **Project #:** **WO#: 10507892**

PM: JMG **Due Date: 02/24/20**

CLIENT: GHD_WA

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exception** ☐

Tracking Number: 1093 0284 1625

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other:_____ **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermometer Used:** ☐ G87A9170600254 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 2/10/20 CMY

Type of ice Received ☐ Blue ☐ Wet ☒ None

		Comments:
Chain of Custody Present?	☒ Yes ☐ No	1.
Chain of Custody Filled Out?	☒ Yes ☐ No	2.
Chain of Custody Relinquished?	☒ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	6.
Rush Turn Around Time Requested?	☐ Yes ☒ No	7.
Sufficient Volume?	☒ Yes ☐ No	8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-14, TO-15 or APH)** -Pace Containers Used?	☒ Yes ☐ No ☒ Yes ☐ No	9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	☒ Yes ☐ No	10. 2/10/20 CMY
Media: Air Can Airbag Filter TDT Passive		11. Individually Certified Cans? Y (N) (list which samples)
Is sufficient information available to reconcile samples to the COC?	☒ Yes ☐ No	12. STAND ALONE GAUGES
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☐ Yes ☐ No	13.

Gauge # ☒ 10AIR26 ☐ 10AIR34 ☐ 10AIR35 ☐ 4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
INF	3019	—	-2	no					
EFF	3701	—	-1.5	no					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: ___ Jenni Gross _____ **Date:** 02/11/20

Note: Whenever there is a discrepanc[illegible] Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: GHD Services Inc
Phone: 734-453-5123

Lab Project Number: 10507892
Project Name: 70496

Lab Sample No: 10507892001 ProjSampleNum: 10507892001 Date Collected: 02/06/20 11:45
Client Sample ID: A-020620-JRL-INF Matrix: Air Date Received: 02/10/20 9:15

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed		CAS No.
Air								
TO-15								
Benzene	3.6	133	11.7	432	36	02/20/20 14:48	NCK	71-43-2
Ethylbenzene	7.2	37.1	31.8	164	36	02/20/20 14:48	NCK	100-41-4
m&p-Xylene	14.4	182	63.6	803	36	02/20/20 14:48	NCK	179601-23-1
o-Xylene	7.2	74.0	31.8	327	36	02/20/20 14:48	NCK	95-47-6
THC as Gas	860	7250	3730	31500	36	02/20/20 14:48	NCK	
Toluene	7.2	206	27.6	789	36	02/20/20 14:48	NCK	108-88-3

Lab Sample No: 10507892003 ProjSampleNum: 10507892003 Date Collected: 02/06/20 11:40
Client Sample ID: A-020620-JRL-EFF Matrix: Air Date Received: 02/10/20 9:15

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed		CAS No.
Air								
TO-15								
Benzene	0.18	0.30	0.58	0.97	1.77	02/20/20 13:50	NCK	71-43-2
Ethylbenzene	0.35	ND	1.5	ND	1.77	02/20/20 13:50	NCK	100-41-4
m&p-Xylene	0.71	ND	3.1	ND	1.77	02/20/20 13:50	NCK	179601-23-1
o-Xylene	0.35	ND	1.5	ND	1.77	02/20/20 13:50	NCK	95-47-6
THC as Gas	42.3	270	184	1170	1.77	02/20/20 13:50	NCK	
Toluene	0.35	0.48	1.3	1.8	1.77	02/20/20 13:50	NCK	108-88-3

SUPPLEMENTAL REPORT

Units Conversion Request

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

February 20, 2020

Christina McClelland
GHD Services, Inc.
20818 44th Ave W
Suite 190
Lynnwood, WA 98036

RE: Project: 70496.17
Pace Project No.: 10507978

Dear Christina McClelland:
Enclosed are the analytical results for sample(s) received by the laboratory on February 07, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Joe Lewandowski, GHD
Eric Maise, GHD Services Inc.

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 70496.17
Pace Project No.: 10507978

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 70496.17
Pace Project No.: 10507978

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10507978001	**GW-020620-JRL-INF 1**	Water	02/06/20 11:15	02/07/20 08:50
10507978002	**GW-020620-JRL-INF 2**	Water	02/06/20 11:00	02/07/20 08:50
10507978003	**GW-020620-JRL-MID 1**	Water	02/06/20 10:45	02/07/20 08:50
10507978004	**GW-020620-JRL-MID 2**	Water	02/06/20 10:30	02/07/20 08:50
10507978005	**GW-020620-JRL-Total EFF**	Water	02/06/20 09:30	02/07/20 08:50
10507978006	**GW-020620-JRL-Total EFF 1**	Water	02/06/20 09:30	02/07/20 08:50
10507978007	**GW-020620-JRL-Total EFF 2**	Water	02/06/20 09:45	02/07/20 08:50
10507978008	**GW-020620-JRL-Total EFF 3**	Water	02/06/20 10:00	02/07/20 08:50
10507978009	**GW-020620-JRL-Total EFF 4**	Water	02/06/20 10:15	02/07/20 08:50
10507978010	**GW-020620-JRL-Total EFF 1-4**	Water	02/06/20 10:15	02/07/20 08:50
10507978011	**GW-020620-JRL-Total EFF 5**	Water	02/06/20 09:30	02/07/20 08:50
10507978012	**GW-020620-JRL-Total EFF 6**	Water	02/06/20 09:45	02/07/20 08:50
10507978013	**GW-020620-JRL-Total EFF 7**	Water	02/06/20 10:00	02/07/20 08:50
10507978014	**GW-020620-JRL-Total EFF 5-7**	Water	02/06/20 10:00	02/07/20 08:50
10507978015	**Trip Blank**	Water	02/06/20 00:00	02/07/20 08:50

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SAMPLE ANALYTE COUNT

Project: 70496.17
Pace Project No.: 10507978

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10507978001	**GW-020620-JRL-INF 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10507978002	**GW-020620-JRL-INF 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10507978003	**GW-020620-JRL-MID 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10507978004	**GW-020620-JRL-MID 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	ML4	7	PASI-M
10507978005	**GW-020620-JRL-Total EFF**	NWTPH-Dx	JVM	4	PASI-M
10507978010	**GW-020620-JRL-Total EFF 1-4**	NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	ML4	7	PASI-M
10507978014	**GW-020620-JRL-Total EFF 5-7**	EPA 1664B OG	JER	1	PASI-M
10507978015	**Trip Blank**	NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	ML4	7	PASI-M

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-INF 1 **Lab ID: 10507978001** Collected: 02/06/20 11:15 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**3620**	ug/L	392	1	02/11/20 11:41	02/12/20 10:27	68334-30-5	
Motor Oil Range SG	ND	ug/L	392	1	02/11/20 11:41	02/12/20 10:27	64742-65-0	
Surrogates								
o-Terphenyl (S)	55	%.	50-150	1	02/11/20 11:41	02/12/20 10:27	84-15-1	
n-Triacontane (S)	61	%.	50-150	1	02/11/20 11:41	02/12/20 10:27	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**189000**	ug/L	10000	100		02/14/20 16:19		G-
Surrogates								
a,a,a-Trifluorotoluene (S)	90	%.	50-150	100		02/14/20 16:19	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**30500**	ug/L	250	250		02/13/20 18:47	71-43-2	
Ethylbenzene	**1450**	ug/L	100	100		02/13/20 19:55	100-41-4	
Toluene	**32800**	ug/L	250	250		02/13/20 18:47	108-88-3	
Xylene (Total)	**17400**	ug/L	300	100		02/13/20 19:55	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	100		02/13/20 19:55	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	100		02/13/20 19:55	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125	100		02/13/20 19:55	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-INF 2 **Lab ID: 10507978002** Collected: 02/06/20 11:00 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**1270**	ug/L	400	1	02/11/20 11:41	02/12/20 10:38	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	02/11/20 11:41	02/12/20 10:38	64742-65-0	
Surrogates								
o-Terphenyl (S)	60	%.	50-150	1	02/11/20 11:41	02/12/20 10:38	84-15-1	
n-Triacontane (S)	67	%.	50-150	1	02/11/20 11:41	02/12/20 10:38	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**325**	ug/L	100	1		02/12/20 18:13		
Surrogates								
a,a,a-Trifluorotoluene (S)	83	%.	50-150	1		02/12/20 18:13	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**20.7**	ug/L	1.0	1		02/13/20 17:08	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/13/20 17:08	100-41-4	
Toluene	**10.2**	ug/L	1.0	1		02/13/20 17:08	108-88-3	
Xylene (Total)	**17.8**	ug/L	3.0	1		02/13/20 17:08	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%.	75-125	1		02/13/20 17:08	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		02/13/20 17:08	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		02/13/20 17:08	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-MID 1 **Lab ID: 10507978003** Collected: 02/06/20 10:45 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**490**	ug/L	417	1	02/11/20 11:41	02/12/20 10:49	68334-30-5	
Motor Oil Range SG	ND	ug/L	417	1	02/11/20 11:41	02/12/20 10:49	64742-65-0	
Surrogates								
o-Terphenyl (S)	67	%.	50-150	1	02/11/20 11:41	02/12/20 10:49	84-15-1	
n-Triacontane (S)	90	%.	50-150	1	02/11/20 11:41	02/12/20 10:49	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**199**	ug/L	100	1		02/12/20 20:29		
Surrogates								
a,a,a-Trifluorotoluene (S)	86	%.	50-150	1		02/12/20 20:29	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**40.0**	ug/L	1.0	1		02/13/20 16:51	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/13/20 16:51	100-41-4	
Toluene	**15.2**	ug/L	1.0	1		02/13/20 16:51	108-88-3	
Xylene (Total)	**28.5**	ug/L	3.0	1		02/13/20 16:51	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%.	75-125	1		02/13/20 16:51	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		02/13/20 16:51	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		02/13/20 16:51	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-MID 2 **Lab ID: 10507978004** Collected: 02/06/20 10:30 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	02/11/20 11:41	02/12/20 11:00	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	02/11/20 11:41	02/12/20 11:00	64742-65-0	
Surrogates								
o-Terphenyl (S)	59	%.	50-150	1	02/11/20 11:41	02/12/20 11:00	84-15-1	
n-Triacontane (S)	57	%.	50-150	1	02/11/20 11:41	02/12/20 11:00	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		02/12/20 21:20		
Surrogates								
a,a,a-Trifluorotoluene (S)	87	%.	50-150	1		02/12/20 21:20	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**8.3**	ug/L	1.0	1		02/13/20 20:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/13/20 20:09	100-41-4	
Toluene	**1.8**	ug/L	1.0	1		02/13/20 20:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/13/20 20:09	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	75-125	1		02/13/20 20:09	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		02/13/20 20:09	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		02/13/20 20:09	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-Total EFF **Lab ID: 10507978005** Collected: 02/06/20 09:30 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	435	1	02/11/20 11:41	02/12/20 11:11	68334-30-5	
Motor Oil Range SG	ND	ug/L	435	1	02/11/20 11:41	02/12/20 11:11	64742-65-0	
Surrogates								
o-Terphenyl (S)	67	%.	50-150	1	02/11/20 11:41	02/12/20 11:11	84-15-1	
n-Triacontane (S)	87	%.	50-150	1	02/11/20 11:41	02/12/20 11:11	638-68-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-Total EFF 1-4 **Lab ID: 10507978010** Collected: 02/06/20 10:15 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		02/12/20 20:12		
Surrogates								
a,a,a-Trifluorotoluene (S)	84	%.	50-150	1		02/12/20 20:12	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		02/13/20 19:52	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/13/20 19:52	100-41-4	
Toluene	ND	ug/L	1.0	1		02/13/20 19:52	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/13/20 19:52	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%.	75-125	1		02/13/20 19:52	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		02/13/20 19:52	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		02/13/20 19:52	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: GW-020620-JRL-Total EFF 5-7 **Lab ID: 10507978014** Collected: 02/06/20 10:00 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664B HEM, Oil and Grease	Analytical Method: EPA 1664B OG							
Oil and Grease	ND	ug/L	6490	1		02/13/20 09:53		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10507978

Sample: Trip Blank **Lab ID: 10507978015** Collected: 02/06/20 00:00 Received: 02/07/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		02/12/20 19:04		
Surrogates								
a,a,a-Trifluorotoluene (S)	87	%.	50-150	1		02/12/20 19:04	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		02/13/20 17:17	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		02/13/20 17:17	100-41-4	
Toluene	ND	ug/L	1.0	1		02/13/20 17:17	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/13/20 17:17	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%.	75-125	1		02/13/20 17:17	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		02/13/20 17:17	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	75-125	1		02/13/20 17:17	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 659669 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10507978002, 10507978003, 10507978004, 10507978010, 10507978015

METHOD BLANK: 3540263 Matrix: Water
Associated Lab Samples: 10507978002, 10507978003, 10507978004, 10507978010, 10507978015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	02/12/20 16:48	
a,a,a-Trifluorotoluene (S)	%.	87	50-150	02/12/20 16:48	

METHOD BLANK: 3540264 Matrix: Water
Associated Lab Samples: 10507978002, 10507978003, 10507978004, 10507978010, 10507978015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	02/12/20 19:55	
a,a,a-Trifluorotoluene (S)	%.	82	50-150	02/12/20 19:55	

LABORATORY CONTROL SAMPLE & LCSD: 3540265 3540266

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1010	1160	101	116	72-130	15	20	
a,a,a-Trifluorotoluene (S)	%.				102	99	50-150			

SAMPLE DUPLICATE: 3540538

Parameter	Units	10507978002 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	325	356	9	30	
a,a,a-Trifluorotoluene (S)	%.	83	83			

SAMPLE DUPLICATE: 3540539

Parameter	Units	10507978003 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	199	249	22	30	
a,a,a-Trifluorotoluene (S)	%.	86	85			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 660046 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10507978001

METHOD BLANK: 3542574 Matrix: Water
Associated Lab Samples: 10507978001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	02/14/20 10:51	
a,a,a-Trifluorotoluene (S)	%.	87	50-150	02/14/20 10:51	

LABORATORY CONTROL SAMPLE & LCSD: 3542575 3542576

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1190	1040	119	104	72-130	13	20	
a,a,a-Trifluorotoluene (S)	%.				100	102	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3542908 3542909

Parameter	Units	10508324001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	ND	1000	1000	1150	1100	115	110	68-146	4	30	
a,a,a-Trifluorotoluene (S)	%.						112	106	50-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 659894 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10507978001, 10507978002, 10507978003

METHOD BLANK: 3541578 Matrix: Water
Associated Lab Samples: 10507978001, 10507978002, 10507978003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/13/20 13:48	
Ethylbenzene	ug/L	ND	1.0	02/13/20 13:48	
Toluene	ug/L	ND	1.0	02/13/20 13:48	
Xylene (Total)	ug/L	ND	3.0	02/13/20 13:48	
1,2-Dichloroethane-d4 (S)	%.	92	75-125	02/13/20 13:48	
4-Bromofluorobenzene (S)	%.	98	75-125	02/13/20 13:48	
Toluene-d8 (S)	%.	96	75-125	02/13/20 13:48	

LABORATORY CONTROL SAMPLE: 3541579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.3	87	75-125	
Ethylbenzene	ug/L	20	19.5	97	75-125	
Toluene	ug/L	20	17.9	90	75-125	
Xylene (Total)	ug/L	60	59.4	99	75-125	
1,2-Dichloroethane-d4 (S)	%.			91	75-125	
4-Bromofluorobenzene (S)	%.			97	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3542096 3542097

Parameter	Units	10508135001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	16.8	16.6	84	83	63-125	1	30	
Ethylbenzene	ug/L	ND	20	20	19.3	19.3	96	96	66-128	0	30	
Toluene	ug/L	ND	20	20	17.7	17.4	88	87	64-125	1	30	
Xylene (Total)	ug/L	ND	60	60	56.7	58.1	94	97	64-131	3	30	
1,2-Dichloroethane-d4 (S)	%.						90	88	75-125			
4-Bromofluorobenzene (S)	%.						97	97	75-125			
Toluene-d8 (S)	%.						101	100	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 659955 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10507978004, 10507978010, 10507978015

METHOD BLANK: 3542004 Matrix: Water
Associated Lab Samples: 10507978004, 10507978010, 10507978015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	02/13/20 16:45	
Ethylbenzene	ug/L	ND	1.0	02/13/20 16:45	
Toluene	ug/L	ND	1.0	02/13/20 16:45	
Xylene (Total)	ug/L	ND	3.0	02/13/20 16:45	
1,2-Dichloroethane-d4 (S)	%.	106	75-125	02/13/20 16:45	
4-Bromofluorobenzene (S)	%.	101	75-125	02/13/20 16:45	
Toluene-d8 (S)	%.	99	75-125	02/13/20 16:45	

LABORATORY CONTROL SAMPLE: 3542005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.6	98	75-125	
Ethylbenzene	ug/L	20	18.6	93	75-125	
Toluene	ug/L	20	19.2	96	75-125	
Xylene (Total)	ug/L	60	56.4	94	75-125	
1,2-Dichloroethane-d4 (S)	%.			107	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			102	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3542008 3542009

Parameter	Units	10507978010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	21.8	20.6	107	101	63-125	6	30	
Ethylbenzene	ug/L	ND	20	20	20.6	19.6	103	98	66-128	5	30	
Toluene	ug/L	ND	20	20	20.9	19.9	104	99	64-125	5	30	
Xylene (Total)	ug/L	ND	60	60	61.9	59.1	103	98	64-131	5	30	
1,2-Dichloroethane-d4 (S)	%.						104	106	75-125			
4-Bromofluorobenzene (S)	%.						102	100	75-125			
Toluene-d8 (S)	%.						102	102	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 659403 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10507978001, 10507978002, 10507978003, 10507978004, 10507978005

METHOD BLANK: 3538603 Matrix: Water
Associated Lab Samples: 10507978001, 10507978002, 10507978003, 10507978004, 10507978005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	ug/L	ND	400	02/12/20 08:57	
Motor Oil Range SG	ug/L	ND	400	02/12/20 08:57	
n-Triacontane (S)	%.	83	50-150	02/12/20 08:57	
o-Terphenyl (S)	%.	75	50-150	02/12/20 08:57	

LABORATORY CONTROL SAMPLE & LCSD: 3538604 3538605

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	2000	1410	1630	71	82	50-150	15	20	
Motor Oil Range SG	ug/L	2000	1580	1720	79	86	50-150	9	20	
n-Triacontane (S)	%.				85	86	50-150			
o-Terphenyl (S)	%.				75	77	50-150			

SAMPLE DUPLICATE: 3538606

Parameter	Units	10507956001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	0.32J mg/L	444		30	
Motor Oil Range SG	ug/L	ND	ND		30	
n-Triacontane (S)	%.	61	80			
o-Terphenyl (S)	%.	58	66			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10507978

QC Batch: 659647 Analysis Method: EPA 1664B OG
QC Batch Method: EPA 1664B OG Analysis Description: 1664B HEM, Oil and Grease
Associated Lab Samples: 10507978014

METHOD BLANK: 3540171 Matrix: Water
Associated Lab Samples: 10507978014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	ug/L	ND	5000	02/13/20 08:39	

LABORATORY CONTROL SAMPLE & LCSD: 3540172 3540173

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Oil and Grease	ug/L	40000	36300	36000	91	90	78-114	1	18	

MATRIX SPIKE SAMPLE: 3540174

Parameter	Units	40203012005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	ug/L	11.7 mg/L	41200	49300	91	78-114	

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QUALIFIERS

Project: 70496.17
Pace Project No.: 10507978

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 659647

[BE]	Batch extracted by solid phase extraction (SPE).

ANALYTE QUALIFIERS

G-	Early peaks present outside the GRO window.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

METHOD CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10507978

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV UST	Water	SW-846 8260B/5030B	N/A

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Minneapolis, MN 55414
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10507978

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10507978001	**GW-020620-JRL-INF 1**	EPA Mod. 3510C	659403	NWTPH-Dx	659598
10507978002	**GW-020620-JRL-INF 2**	EPA Mod. 3510C	659403	NWTPH-Dx	659598
10507978003	**GW-020620-JRL-MID 1**	EPA Mod. 3510C	659403	NWTPH-Dx	659598
10507978004	**GW-020620-JRL-MID 2**	EPA Mod. 3510C	659403	NWTPH-Dx	659598
10507978005	**GW-020620-JRL-Total EFF**	EPA Mod. 3510C	659403	NWTPH-Dx	659598
10507978001	**GW-020620-JRL-INF 1**	NWTPH-Gx	660046		
10507978002	**GW-020620-JRL-INF 2**	NWTPH-Gx	659669		
10507978003	**GW-020620-JRL-MID 1**	NWTPH-Gx	659669		
10507978004	**GW-020620-JRL-MID 2**	NWTPH-Gx	659669		
10507978010	**GW-020620-JRL-Total EFF 1-4**	NWTPH-Gx	659669		
10507978015	**Trip Blank**	NWTPH-Gx	659669		
10507978001	**GW-020620-JRL-INF 1**	EPA 8260B	659894		
10507978002	**GW-020620-JRL-INF 2**	EPA 8260B	659894		
10507978003	**GW-020620-JRL-MID 1**	EPA 8260B	659894		
10507978004	**GW-020620-JRL-MID 2**	EPA 8260B	659955		
10507978010	**GW-020620-JRL-Total EFF 1-4**	EPA 8260B	659955		
10507978015	**Trip Blank**	EPA 8260B	659955		
10507978014	**GW-020620-JRL-Total EFF 5-7**	EPA 1664B OG	659647		

WO# : 10507978

10507978

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: GHD Services, Inc.	Report To: Christina McClelland	Attention: Christina McClelland
Address: 20818 44th Avenue West, Suite 190	Copy To: Eric Maise and Thuan Bui	Company Name: GHD Services, Inc.
Lynnwood, WA 98036		Address: 2055 Niagara Falls Boulevard Suite 90, Niagara Falls, New York, 14304
Email To: christina.mcclelland@ghd.com, eric.maise@ghd.com, thuan.bui@ghd.com	Purchase Order No.:	Pace Quote Reference:
	Client Project ID: 73496.17	Pace Project Manager: Jennifer Groes
Phone: 4258583522 Fax:	Container Order Number:	Pace Profile #:
Requested Due Date/TAT: Standard		

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9, -) Sample IDs must be unique)	MATRIX CODE (Enter valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analysis Test: 1,4-D (NWTPH-DX) with Silica Gel	TPHg (NWTPH-Gx)	BTEX (EPA 8260)	EDB Tees	Residual Chlorine (Y/N)	
1	GW-020620 - JBL-INF 1	WT	G	2/6/20	1115				3			X						X	X	X			
	GW-020620 - JBL-INF 2	WT	G		1100				3			X						X	X	X			
2	GW-020620 - JBL-MID 1	WT	G		1045				3			X						X	X	X			
3	GW-020620 - JBL-MID 2	WT	G		1030				3			X						X	X	X			
4	GW-020620 - JBL-Total EFF	WT	G		0930				2			X						X					
5	GW-020620 - JBL-Total EFF 1	WT	G		0930				2			X							X	X			Composite EFF 1, 2, 3, 4 w/ lab
6	GW-020620 - JBL-Total EFF 2	WT	G		0945				2			X							X	X			
7	GW-020620 - JBL-Total EFF 3	WT	G		1000				2			X							X	X			
8	GW-020620 - JBL-Total EFF 4	WT	G		1015				2			X							X	X			
9	GW-020620 - JBL-Total EFF 5	WT	G		0930				1			X									X		
10	GW-020620 - JBL-Total EFF 6	WT	G		0945				1			X									X		Composite EFF 5, 6, 7 w/ lab
11	GW-020620 - JBL-Total EFF 7	WT	G		1000				1												X		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	GHD	2/6/20	1200	Aaron / Pace	2/7/20	0850	5.5	Y	N	Y
SIX MONTHLY										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Lankhorst

SIGNATURE of SAMPLER: [signature] DATE Signed: 02-06-20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 14Nov2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.30**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt **Client Name:** GHD **Project #:** **WO#: 10507978**

PM: JMG **Due Date: 02/21/20**

CLIENT: GHD_WA

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: 1956 2239 8739

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☒Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☒T4(0254) ☐T5(0489) **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 5.4 °C **Average Corrected Temp (no temp blank only):** ☐See Exceptions

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 5.5 °C _____ °C ☐1 Container

USDA Regulated Soil: (☒N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** MK2 2-7-20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
	MK2 2-7-20			
Chain of Custody Present and Filled Out?	☒Yes	☒No		1. No COC included
Chain of Custody Relinquished?	☐Yes	☒No		2.
Sampler Name and/or Signature on COC?	☐Yes	☐No	☒N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No	JMG	5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No	021220	6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☐Yes	☒No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☐Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	JMG 021220 ☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☒No	☐N/A	
Trip Blank Present?	☒Yes	☐No	☐N/A	14. 4 water trip blanks
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	Pace Trip Blank Lot # (if purchased): 242638

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Joe Lewandowski Date/Time: _____

Comments/Resolution: Received copy of coc from the client on 02/11/20.

Project Manager Review: Jenni Gross **Date:** 02/12/20

Note: Whenever there is a discrepancy affecting compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: AF1 2/11/20

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 31, 2020

Jeff Gaarder
GHD
2055 Niagara Falls
Boulevard Suite #3
Niagara Falls, NY 14304

RE: Project: 70496
Pace Project No.: 10511944

Dear Jeff Gaarder:

Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Eric Maise, GHD Services Inc.
Christina McClelland, GHD Services, Inc.

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: 70496
Pace Project No.: 10511944

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

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SAMPLE SUMMARY

Project: 70496
Pace Project No.: 10511944

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10511944001	**A-031620-JRL-INF**	Air	03/16/20 13:35	03/17/20 09:40
10511944002	**A-031620-JRL-INF CERT#3931**	Air	03/16/20 13:35	03/17/20 09:40
10511944003	**A-031620-JRL-EFF**	Air	03/16/20 13:30	03/17/20 09:40
10511944004	**A-031620-JRL-EFF CERT#3972**	Air	03/16/20 13:30	03/17/20 09:40

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SAMPLE ANALYTE COUNT

Project: 70496
Pace Project No.: 10511944

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10511944001	**A-031620-JRL-INF**	TO-15	NCK	6	PASI-M
10511944002	**A-031620-JRL-INF CERT#3931**	TO-15	AC1	5	PASI-M
10511944003	**A-031620-JRL-EFF**	TO-15	NCK	6	PASI-M
10511944004	**A-031620-JRL-EFF CERT#3972**	TO-15	AFV	5	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10511944

Sample: A-031620-JRL-INF **Lab ID: 10511944001** Collected: 03/16/20 13:35 Received: 03/17/20 09:40 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis							
Benzene	**696**	ppbv	4.0	40.4		03/27/20 23:38	71-43-2	
Ethylbenzene	**174**	ppbv	8.1	40.4		03/27/20 23:38	100-41-4	
THC as Gas	**31500**	ppbv	1960	40.4		03/27/20 23:38		
Toluene	**1240**	ppbv	32.3	161.6		03/31/20 06:32	108-88-3	
m&p-Xylene	**788**	ppbv	16.2	40.4		03/27/20 23:38	179601-23-1	
o-Xylene	**259**	ppbv	8.1	40.4		03/27/20 23:38	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10511944

Sample: A-031620-JRL-INF CERT#3931 **Lab ID: 10511944002** Collected: 03/16/20 13:35 Received: 03/17/20 09:40 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15 Pace Analytical Services - Minneapolis							
Benzene	ND	ug/m3	0.32	1		02/16/20 09:59	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		02/16/20 09:59	100-41-4	
Toluene	ND	ug/m3	0.77	1		02/16/20 09:59	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		02/16/20 09:59	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		02/16/20 09:59	95-47-6	

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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10511944

Sample: A-031620-JRL-EFF **Lab ID: 10511944003** Collected: 03/16/20 13:30 Received: 03/17/20 09:40 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15 Pace Analytical Services - Minneapolis							
Benzene	**2.7**	ppbv	0.18	1.8		03/27/20 23:12	71-43-2	
Ethylbenzene	ND	ppbv	0.36	1.8		03/27/20 23:12	100-41-4	
THC as Gas	**124**	ppbv	87.5	1.8		03/27/20 23:12		
Toluene	**2.7**	ppbv	0.36	1.8		03/27/20 23:12	108-88-3	
m&p-Xylene	**1.2**	ppbv	0.72	1.8		03/27/20 23:12	179601-23-1	
o-Xylene	**0.47**	ppbv	0.36	1.8		03/27/20 23:12	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 70496
Pace Project No.: 10511944

Sample: A-031620-JRL-EFF CERT#3972 **Lab ID: 10511944004** Collected: 03/16/20 13:30 Received: 03/17/20 09:40 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Individual Can Certification	Analytical Method: TO-15 Pace Analytical Services - Minneapolis							
Benzene	ND	ug/m3	0.32	1		02/09/20 21:34	71-43-2	
Ethylbenzene	ND	ug/m3	0.88	1		02/09/20 21:34	100-41-4	
Toluene	ND	ug/m3	0.77	1		02/09/20 21:34	108-88-3	
m&p-Xylene	ND	ug/m3	1.8	1		02/09/20 21:34	179601-23-1	
o-Xylene	ND	ug/m3	0.88	1		02/09/20 21:34	95-47-6	

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QUALITY CONTROL DATA

Project: 70496
Pace Project No.: 10511944

QC Batch: 667005
QC Batch Method: TO-15
Analysis Method: TO-15
Analysis Description: TO15 MSV AIR
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10511944001, 10511944003

METHOD BLANK: 3576560 Matrix: Air
Associated Lab Samples: 10511944001, 10511944003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ppbv	ND	0.10	03/27/20 11:02	
Ethylbenzene	ppbv	ND	0.20	03/27/20 11:02	
m&p-Xylene	ppbv	ND	0.40	03/27/20 11:02	
o-Xylene	ppbv	ND	0.20	03/27/20 11:02	
THC as Gas	ppbv	ND	48.6	03/27/20 11:02	
Toluene	ppbv	ND	0.20	03/27/20 11:02	

LABORATORY CONTROL SAMPLE: 3576561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ppbv	10.3	10.9	105	70-133	
Ethylbenzene	ppbv	10.3	12.8	124	70-142	
m&p-Xylene	ppbv	20.7	25.2	122	70-141	
o-Xylene	ppbv	10.3	12.6	122	70-135	
THC as Gas	ppbv	1170	1290	110	66-145	
Toluene	ppbv	10.3	12.3	119	70-136	

SAMPLE DUPLICATE: 3578181

Parameter	Units	10511944001 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ppbv	696	666	4	25	
Ethylbenzene	ppbv	174	167	4	25	
m&p-Xylene	ppbv	788	751	5	25	
o-Xylene	ppbv	259	245	6	25	
THC as Gas	ppbv	31500	30300	4	25	
Toluene	ppbv	1240	1220	2	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 70496
Pace Project No.: 10511944

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496
Pace Project No.: 10511944

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10511944001	**A-031620-JRL-INF**	TO-15	667005		
10511944003	**A-031620-JRL-EFF**	TO-15	667005		
10511944002	**A-031620-JRL-INF CERT#3931**	TO-15	667286		
10511944004	**A-031620-JRL-EFF CERT#3972**	TO-15	667286		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A — Required Client Information:

Company: GHD Services, Inc.
Address: 20818 44th Avenue West, Suite 190
Lynnwood, WA 98036
Email To: jeff.gaarder@ghd.com, christina.mcclelland@ghd.com
Phone: (425)563-6502 Fax:
Requested Due Date/TAT: Standard

Section B — Required Project Information:

Report To: Jeff Gaarder
Copy To: Christina McClelland
Purchase Order No.:
Client Project ID: 70496
Container Order Number:

Section C — Invoice Information:

Attention: Jeff Gaarder
Company Name: GHD Services, Inc.
Address: 2055 Niagara Falls Boulevard Suite #3, Niagara Falls, New York, 14304
Pace Quote Reference:
Pace Project Manager: Jennifer Gross
Pace Profile #: 40142

Regulatory Agency:
State / Location:

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Gx (TPHg)	BTEX (TO-15)	Residual Chlorine (Y/N)	Requested Analysis Filtered (Y/N)
1	A-031620-JRL-INF	OT	G	3/16/20	1335				1	X									X	X		PACE 3931
2	A-031620-JRL-EFF	OT	G	3/16/20	1330				1	X									X	X		PACE 3972
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		03/16/20	1340		3-16	1700	— Y Y Y
		3-16	1700	Monte Pace	3/17/20	0940	A or B N Y Y

CW MONTHLY

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: JOE LEWANDOWSKI
SIGNATURE of SAMPLER:
DATE Signed: 03/16/20

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Page 1 of 1

WO#: 10511944

10511944

Pace Analytical®	Document Name: Air Sample Condition Upon Receipt	Document Revised: 19Nov2019 Page 1 of 1
	Document No.: F-MN-A-106-rev.20	Pace Analytical Services - Minneapolis

Air Sample Condition Upon Receipt

Client Name: GHD - WA

Project #: **WO#: 10511944**

PM: JMG **Due Date: 03/31/20**

CLIENT: GHD_WA

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exception** ☐

Tracking Number: 1686 7300 7370

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: _____ **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): ~ **Corrected Temp (°C):** ~

Thermometer Used: ☐ G87A9170600254 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** ~

Date & Initials of Person Examining Contents: 3/17/20 MT

Type of ice Received ☐ Blue ☐ Wet ☒ None

		Comments:
Chain of Custody Present?	☒ Yes ☐ No	1.
Chain of Custody Filled Out?	☒ Yes ☐ No	2.
Chain of Custody Relinquished?	☒ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☒ Yes ☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	6.
Rush Turn Around Time Requested?	☐ Yes ☒ No	7.
Sufficient Volume?	☒ Yes ☐ No	8.
Correct Containers Used? **(Tedlar bags not acceptable container for TO-14, TO-15 or APH)** -Pace Containers Used?	☒ Yes ☐ No ☒ Yes ☐ No	9.
Containers Intact? **(visual inspection/no leaks when pressurized)**	☒ Yes ☐ No	10.
Media: Air Can Airbag Filter TDT Passive		11. Individually Certified Cans (Y) N (list which samples)
Is sufficient information available to reconcile samples to the COC?	☒ Yes ☐ No	12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☒ Yes ☐ No	13.

Gauge # ☐ 10AIR26 ☒ 10AIR34 ☐ 10AIR35 ☐ 4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
INF	3931	-	-5	+10					
EFF	3972	-	-2	+10					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross **Date:** 03/17/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical Services, Inc.
1700 Elm Street – Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

ANALYTICAL RESULTS

Client: GHD Services Inc
Phone: 734-453-5123

Lab Project Number: 10511944
Project Name: 70496

Lab Sample No: 10511944001 ProjSampleNum: 10511944001 Date Collected: 03/16/20 13:35
Client Sample ID: A-031620-JRL-INF Matrix: Air Date Received: 03/17/20 9:40

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	4	696	13	2260	40.4	03/27/20 23:38 NCK	71-43-2
Ethylbenzene	8.1	174	35.8	768	40.4	03/27/20 23:38 NCK	100-41-4
m&p-Xylene	16.2	788	71.5	3480	40.4	03/27/20 23:38 NCK	179601-23-1
o-Xylene	8.1	259	35.8	1140	40.4	03/27/20 23:38 NCK	95-47-6
THC as Gas	1960	31500	8510	137000	40.4	03/27/20 23:38 NCK	
Toluene	32.3	1240	124	4750	161.6	03/31/20 6:32 NCK	108-88-3

Lab Sample No: 10511944003 ProjSampleNum: 10511944003 Date Collected: 03/16/20 13:30
Client Sample ID: A-031620-JRL-EFF Matrix: Air Date Received: 03/17/20 9:40

Parameters	Report Limit ppbv	Results ppbv	Report Limit ug/m3	Results ug/m3	DF	Analyzed	CAS No.
Air							
TO-15							
Benzene	0.18	2.7	0.58	8.8	1.8	03/27/20 23:12 NCK	71-43-2
Ethylbenzene	0.36	ND	1.6	ND	1.8	03/27/20 23:12 NCK	100-41-4
m&p-Xylene	0.72	1.2	3.2	5.3	1.8	03/27/20 23:12 NCK	179601-23-1
o-Xylene	0.36	0.47	1.6	2.1	1.8	03/27/20 23:12 NCK	95-47-6
THC as Gas	87.5	124	380	538	1.8	03/27/20 23:12 NCK	
Toluene	0.36	2.7	1.4	10.3	1.8	03/27/20 23:12 NCK	108-88-3

SUPPLEMENTAL REPORT

Units Conversion Request

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 30, 2020

Christina McClelland
GHD Services, Inc.
20818 44th Ave W
Suite 190
Lynnwood, WA 98036

RE: Project: 70496.17
Pace Project No.: 10511957

Dear Christina McClelland:
Enclosed are the analytical results for sample(s) received by the laboratory on March 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Joe Lewandowski, GHD
Eric Maise, GHD Services Inc.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 70496.17
Pace Project No.: 10511957

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 70496.17
Pace Project No.: 10511957

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10511957001	**GW-031620-JRL-INF 1**	Water	03/16/20 13:00	03/17/20 08:50
10511957002	**GW-031620-JRL-INF 2**	Water	03/16/20 12:45	03/17/20 08:50
10511957003	**GW-031620-JRL-Mid 1**	Water	03/16/20 12:30	03/17/20 08:50
10511957004	**GW-031620-JRL-Mid 2**	Water	03/16/20 12:51	03/17/20 08:50
10511957005	**GW-031620-JRL-Total EFF**	Water	03/16/20 11:15	03/17/20 08:50
10511957006	**GW-031620-JRL-Total EFF 1**	Water	03/16/20 11:15	03/17/20 08:50
10511957007	**GW-031620-JRL-Total EFF 2**	Water	03/16/20 11:30	03/17/20 08:50
10511957008	**GW-031620-JRL-Total EFF 3**	Water	03/16/20 11:45	03/17/20 08:50
10511957009	**GW-031620-JRL-Total EFF 4**	Water	03/16/20 12:00	03/17/20 08:50
10511957010	**GW-031620-JRL-Total EFF 5**	Water	03/16/20 11:15	03/17/20 08:50
10511957011	**GW-031620-JRL-Total EFF 6**	Water	03/16/20 11:30	03/17/20 08:50
10511957012	**GW-031620-JRL-Total EFF 7**	Water	03/16/20 11:45	03/17/20 08:50
10511957013	**Trip Blank**	Water	03/16/20 00:00	03/17/20 08:50
10511957014	**GW-031620-JRL-Total EFF1,2,3,4**	Water	03/16/20 12:00	03/17/20 08:50
10511957015	**GW-031620-JRL-Total EFF 5,6,7**	Water	03/16/20 11:45	03/17/20 08:50

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 70496.17
Pace Project No.: 10511957

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10511957001	**GW-031620-JRL-INF 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10511957002	**GW-031620-JRL-INF 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	DS2	7	PASI-M
10511957003	**GW-031620-JRL-Mid 1**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10511957004	**GW-031620-JRL-Mid 2**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10511957005	**GW-031620-JRL-Total EFF**	NWTPH-Dx	JVM	4	PASI-M
10511957013	**Trip Blank**	NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	ML4	7	PASI-M
10511957014	**GW-031620-JRL-Total EFF1,2,3,4**	NWTPH-Gx	LPM	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10511957015	**GW-031620-JRL-Total EFF 5,6,7**	EPA 1664B OG	JER	1	PASI-M

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-INF 1 **Lab ID: 10511957001** Collected: 03/16/20 13:00 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**8360**	ug/L	400	1	03/18/20 10:12	03/19/20 21:40	68334-30-5	D6
Motor Oil Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 21:40	64742-65-0	
Surrogates								
o-Terphenyl (S)	92	%.	50-150	1	03/18/20 10:12	03/19/20 21:40	84-15-1	
n-Triacontane (S)	86	%.	50-150	1	03/18/20 10:12	03/19/20 21:40	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**136000**	ug/L	10000	100		03/19/20 19:15		G-
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%.	50-150	100		03/19/20 19:15	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**10400**	ug/L	250	250		03/23/20 04:06	71-43-2	
Ethylbenzene	**1980**	ug/L	100	100		03/24/20 17:01	100-41-4	
Toluene	**19300**	ug/L	100	100		03/24/20 17:01	108-88-3	
Xylene (Total)	**16900**	ug/L	300	100		03/24/20 17:01	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%.	75-125	100		03/24/20 17:01	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	100		03/24/20 17:01	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	75-125	100		03/24/20 17:01	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-INF 2 **Lab ID: 10511957002** Collected: 03/16/20 12:45 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	**1390**	ug/L	400	1	03/18/20 10:12	03/19/20 22:02	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 22:02	64742-65-0	
Surrogates								
o-Terphenyl (S)	60	%.	50-150	1	03/18/20 10:12	03/19/20 22:02	84-15-1	
n-Triacontane (S)	73	%.	50-150	1	03/18/20 10:12	03/19/20 22:02	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**6210**	ug/L	1000	10		03/26/20 23:50		G-
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%.	50-150	10		03/26/20 23:50	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**271**	ug/L	2.0	2		03/24/20 09:29	71-43-2	
Ethylbenzene	**11.3**	ug/L	1.0	1		03/23/20 01:18	100-41-4	
Toluene	**356**	ug/L	2.0	2		03/24/20 09:29	108-88-3	
Xylene (Total)	**729**	ug/L	6.0	2		03/24/20 09:29	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%.	75-125	1		03/23/20 01:18	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		03/23/20 01:18	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125	1		03/23/20 01:18	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-Mid 1 **Lab ID: 10511957003** Collected: 03/16/20 12:30 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 22:13	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 22:13	64742-65-0	
Surrogates								
o-Terphenyl (S)	54	%.	50-150	1	03/18/20 10:12	03/19/20 22:13	84-15-1	
n-Triacontane (S)	72	%.	50-150	1	03/18/20 10:12	03/19/20 22:13	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**1440**	ug/L	100	1		03/19/20 20:39		G-
Surrogates								
a,a,a-Trifluorotoluene (S)	93	%.	50-150	1		03/19/20 20:39	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**99.2**	ug/L	1.0	1		03/24/20 15:37	71-43-2	
Ethylbenzene	**1.9**	ug/L	1.0	1		03/24/20 15:37	100-41-4	
Toluene	**97.0**	ug/L	1.0	1		03/24/20 15:37	108-88-3	
Xylene (Total)	**216**	ug/L	3.0	1		03/24/20 15:37	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		03/24/20 15:37	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		03/24/20 15:37	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	1		03/24/20 15:37	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-Mid 2 **Lab ID: 10511957004** Collected: 03/16/20 12:51 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	392	1	03/18/20 10:12	03/19/20 22:24	68334-30-5	
Motor Oil Range SG	ND	ug/L	392	1	03/18/20 10:12	03/19/20 22:24	64742-65-0	
Surrogates								
o-Terphenyl (S)	60	%.	50-150	1	03/18/20 10:12	03/19/20 22:24	84-15-1	
n-Triacontane (S)	85	%.	50-150	1	03/18/20 10:12	03/19/20 22:24	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**185**	ug/L	100	1		03/19/20 21:13		
Surrogates								
a,a,a-Trifluorotoluene (S)	96	%.	50-150	1		03/19/20 21:13	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**12.8**	ug/L	1.0	1		03/24/20 15:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/24/20 15:20	100-41-4	
Toluene	**10.4**	ug/L	1.0	1		03/24/20 15:20	108-88-3	
Xylene (Total)	**21.2**	ug/L	3.0	1		03/24/20 15:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		03/24/20 15:20	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		03/24/20 15:20	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	75-125	1		03/24/20 15:20	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-Total EFF **Lab ID: 10511957005** Collected: 03/16/20 11:15 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 22:35	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	03/18/20 10:12	03/19/20 22:35	64742-65-0	
Surrogates								
o-Terphenyl (S)	60	%.	50-150	1	03/18/20 10:12	03/19/20 22:35	84-15-1	
n-Triacontane (S)	87	%.	50-150	1	03/18/20 10:12	03/19/20 22:35	638-68-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: Trip Blank **Lab ID: 10511957013** Collected: 03/16/20 00:00 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/19/20 19:49		
Surrogates								
a,a,a-Trifluorotoluene (S)	97	%.	50-150	1		03/19/20 19:49	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/24/20 11:58	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/24/20 11:58	100-41-4	
Toluene	ND	ug/L	1.0	1		03/24/20 11:58	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/24/20 11:58	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		03/24/20 11:58	17060-07-0	
Toluene-d8 (S)	99	%.	75-125	1		03/24/20 11:58	2037-26-5	
4-Bromofluorobenzene (S)	106	%.	75-125	1		03/24/20 11:58	460-00-4	

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-Total EFF1,2,3,4 **Lab ID: 10511957014** Collected: 03/16/20 12:00 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/26/20 20:44		
Surrogates								
a,a,a-Trifluorotoluene (S)	94	%.	50-150	1		03/26/20 20:44	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/24/20 14:47	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/24/20 14:47	100-41-4	
Toluene	ND	ug/L	1.0	1		03/24/20 14:47	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/24/20 14:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%.	75-125	1		03/24/20 14:47	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		03/24/20 14:47	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	75-125	1		03/24/20 14:47	460-00-4	

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ANALYTICAL RESULTS

Project: 70496.17
Pace Project No.: 10511957

Sample: GW-031620-JRL-Total EFF 5,6,7 **Lab ID: 10511957015** Collected: 03/16/20 11:45 Received: 03/17/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
1664B HEM, Oil and Grease	Analytical Method: EPA 1664B OG							
Oil and Grease	ND	ug/L	6940	1		03/23/20 09:06		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 665724 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10511957001, 10511957003, 10511957004, 10511957013

METHOD BLANK: 3570379 Matrix: Water
Associated Lab Samples: 10511957001, 10511957003, 10511957004, 10511957013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/19/20 17:49	
a,a,a-Trifluorotoluene (S)	%.	103	50-150	03/19/20 17:49	

LABORATORY CONTROL SAMPLE & LCSD: 3570381 3570382

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1040	924	104	92	72-130	12	20	
a,a,a-Trifluorotoluene (S)	%.				108	103	50-150			

SAMPLE DUPLICATE: 3570797

Parameter	Units	10512565001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	6390	6530	2	30	E
a,a,a-Trifluorotoluene (S)	%.	106	108			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 666778 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10511957002, 10511957014

METHOD BLANK: 3575240 Matrix: Water
Associated Lab Samples: 10511957002, 10511957014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/26/20 17:03	
a,a,a-Trifluorotoluene (S)	%.	98	50-150	03/26/20 17:03	

METHOD BLANK: 3575241 Matrix: Water
Associated Lab Samples: 10511957002, 10511957014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/26/20 19:53	
a,a,a-Trifluorotoluene (S)	%.	95	50-150	03/26/20 19:53	

LABORATORY CONTROL SAMPLE & LCSD: 3575242 3575243

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1040	921	104	92	72-130	12	20	
a,a,a-Trifluorotoluene (S)	%.				103	101	50-150			

SAMPLE DUPLICATE: 3575877

Parameter	Units	10512536004 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	<38.3	ND		30	
a,a,a-Trifluorotoluene (S)	%.	94	95			

SAMPLE DUPLICATE: 3575878

Parameter	Units	10512536007 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	<38.3	ND		30	
a,a,a-Trifluorotoluene (S)	%.	94	94			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 666045 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10511957002

METHOD BLANK: 3572348 Matrix: Water
Associated Lab Samples: 10511957002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/22/20 20:04	
Ethylbenzene	ug/L	ND	1.0	03/22/20 20:04	
Toluene	ug/L	ND	1.0	03/22/20 20:04	
Xylene (Total)	ug/L	ND	3.0	03/22/20 20:04	
1,2-Dichloroethane-d4 (S)	%.	96	75-125	03/22/20 20:04	
4-Bromofluorobenzene (S)	%.	98	75-125	03/22/20 20:04	
Toluene-d8 (S)	%.	100	75-125	03/22/20 20:04	

LABORATORY CONTROL SAMPLE: 3572349

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	17.9	90	75-125	
Ethylbenzene	ug/L	20	17.5	87	75-125	
Toluene	ug/L	20	18.5	92	75-125	
Xylene (Total)	ug/L	60	50.2	84	75-125	
1,2-Dichloroethane-d4 (S)	%.			98	75-125	
4-Bromofluorobenzene (S)	%.			100	75-125	
Toluene-d8 (S)	%.			100	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3572923 3572924

Parameter	Units	10512536002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	6.2	20	20	24.8	26.8	93	103	63-125	8	30	
Ethylbenzene	ug/L	9.3	20	20	29.7	33.3	102	120	66-128	11	30	
Toluene	ug/L	1.2	20	20	19.4	21.2	91	100	64-125	9	30	
Xylene (Total)	ug/L	<0.29	60	60	51.6	59.7	86	100	64-131	15	30	
1,2-Dichloroethane-d4 (S)	%.						110	108	75-125			
4-Bromofluorobenzene (S)	%.						101	99	75-125			
Toluene-d8 (S)	%.						102	101	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 666262 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10511957001, 10511957003, 10511957004, 10511957013, 10511957014

METHOD BLANK: 3573054 Matrix: Water
Associated Lab Samples: 10511957001, 10511957003, 10511957004, 10511957013, 10511957014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/24/20 11:18	
Ethylbenzene	ug/L	ND	1.0	03/24/20 11:18	
Toluene	ug/L	ND	1.0	03/24/20 11:18	
Xylene (Total)	ug/L	ND	3.0	03/24/20 11:18	
1,2-Dichloroethane-d4 (S)	%.	99	75-125	03/24/20 11:18	
4-Bromofluorobenzene (S)	%.	105	75-125	03/24/20 11:18	
Toluene-d8 (S)	%.	100	75-125	03/24/20 11:18	

LABORATORY CONTROL SAMPLE: 3573055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	16.8	84	75-125	
Ethylbenzene	ug/L	20	18.5	93	75-125	
Toluene	ug/L	20	18.3	92	75-125	
Xylene (Total)	ug/L	60	57.0	95	75-125	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			102	75-125	
Toluene-d8 (S)	%.			101	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3574376 3574377

Parameter	Units	10511699001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	<0.12	20	20	18.4	17.3	92	87	63-125	6	30	
Ethylbenzene	ug/L	<0.075	20	20	20.3	19.3	101	97	66-128	5	30	
Toluene	ug/L	<0.12	20	20	20.1	18.7	101	93	64-125	7	30	
Xylene (Total)	ug/L	<0.29	60	60	61.0	58.7	102	98	64-131	4	30	
1,2-Dichloroethane-d4 (S)	%.						97	99	75-125			
4-Bromofluorobenzene (S)	%.						102	104	75-125			
Toluene-d8 (S)	%.						102	102	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 665452 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10511957001, 10511957002, 10511957003, 10511957004, 10511957005

METHOD BLANK: 3568944 Matrix: Water
Associated Lab Samples: 10511957001, 10511957002, 10511957003, 10511957004, 10511957005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	ug/L	ND	400	03/19/20 21:07	
Motor Oil Range SG	ug/L	ND	400	03/19/20 21:07	
n-Triacontane (S)	%.	81	50-150	03/19/20 21:07	
o-Terphenyl (S)	%.	63	50-150	03/19/20 21:07	

LABORATORY CONTROL SAMPLE & LCSD: 3568945 3568946

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	2000	1400	1600	70	80	50-150	13	20	
Motor Oil Range SG	ug/L	2000	1510	1790	76	89	50-150	17	20	
n-Triacontane (S)	%.				81	91	50-150			
o-Terphenyl (S)	%.				73	80	50-150			

SAMPLE DUPLICATE: 3568965

Parameter	Units	10511957001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	8360	5890	35	30	D6
Motor Oil Range SG	ug/L	ND	140J		30	
n-Triacontane (S)	%.	86	83			
o-Terphenyl (S)	%.	92	79			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496.17
Pace Project No.: 10511957

QC Batch: 666079
QC Batch Method: EPA 1664B OG
Analysis Method: EPA 1664B OG
Analysis Description: 1664B HEM, Oil and Grease
Associated Lab Samples: 10511957015

METHOD BLANK: 3572427 Matrix: Water
Associated Lab Samples: 10511957015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Oil and Grease	ug/L	ND	5000	03/23/20 08:18	

LABORATORY CONTROL SAMPLE: 3572428

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Oil and Grease	ug/L	40000	33500	84	78-114	

MATRIX SPIKE SAMPLE: 3572429

Parameter	Units	10512168002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Oil and Grease	ug/L	ND	38100	33500	82	78-114	

SAMPLE DUPLICATE: 3572430

Parameter	Units	10512134001 Result	Dup Result	RPD	Max RPD	Qualifiers
Oil and Grease	ug/L	ND	ND		18	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 70496.17
Pace Project No.: 10511957

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

BATCH QUALIFIERS

Batch: 666079

[BE]	Batch extracted by solid phase extraction (SPE).

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
G-	Early peaks present outside the GRO window.

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METHOD CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10511957

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV UST	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496.17
Pace Project No.: 10511957

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10511957001	**GW-031620-JRL-INF 1**	EPA Mod. 3510C	665452	NWTPH-Dx	665784
10511957002	**GW-031620-JRL-INF 2**	EPA Mod. 3510C	665452	NWTPH-Dx	665784
10511957003	**GW-031620-JRL-Mid 1**	EPA Mod. 3510C	665452	NWTPH-Dx	665784
10511957004	**GW-031620-JRL-Mid 2**	EPA Mod. 3510C	665452	NWTPH-Dx	665784
10511957005	**GW-031620-JRL-Total EFF**	EPA Mod. 3510C	665452	NWTPH-Dx	665784
10511957001	**GW-031620-JRL-INF 1**	NWTPH-Gx	665724		
10511957002	**GW-031620-JRL-INF 2**	NWTPH-Gx	666778		
10511957003	**GW-031620-JRL-Mid 1**	NWTPH-Gx	665724		
10511957004	**GW-031620-JRL-Mid 2**	NWTPH-Gx	665724		
10511957013	**Trip Blank**	NWTPH-Gx	665724		
10511957014	**GW-031620-JRL-Total EFF1,2,3,4**	NWTPH-Gx	666778		
10511957001	**GW-031620-JRL-INF 1**	EPA 8260B	666262		
10511957002	**GW-031620-JRL-INF 2**	EPA 8260B	666045		
10511957003	**GW-031620-JRL-Mid 1**	EPA 8260B	666262		
10511957004	**GW-031620-JRL-Mid 2**	EPA 8260B	666262		
10511957013	**Trip Blank**	EPA 8260B	666262		
10511957014	**GW-031620-JRL-Total EFF1,2,3,4**	EPA 8260B	666262		
10511957015	**GW-031620-JRL-Total EFF 5,6,7**	EPA 1664B OG	666079		

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services, Inc.	Report To:	Christina McClelland	Attention:	Christina McClelland
Address:	20818 44th Avenue West, Suite 190	Copy To:	Eric Maise and Thuan Bui	Company Name:	GHD Services, Inc.
	Lynnwood, WA 98036			Address:	2055 Niagara Falls Boulevard Suite #3, Niagara Falls, New York, 14304
Email To:	christina.mcclelland@ghd.com, eric.maise@ghd.com, thuan.bui@ghd.com	Purchase Order No.		Pace Quote Reference:	
Phone:	(425)563-6502 Fax:	Client Project ID:	70496.17	Pace Project Manager:	Jennifer Gross
Requested Due Date/TAT:	Standard	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location

WO# : 10511957

10511957

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	TPHd (NWTPH-Dx) with Silica Gel	TPHg (NWTPH-Gx)	BTEX(EPA 8260)	FOG 1664	Residual Chlorine (Y/N)	
1	GW- 031620 -JRL -INF 1	WT	G	3/16/20	1300				8				X						X	X	X				001
	GW- 031620 -JRL -INF 2	WT	G		1245				8				X						X	X	X				002
2	GW- 031620 -JRL -MID 1	WT	G		1230				8				X						X	X	X				003
3	GW- 031620 -JRL -MID 2	WT	G		1215				8				X						X	X	X				004
4	GW- 031620 -JRL -Total EFF	WT	G		1145				2				X						X						005
5	GW- 031620 -JRL -Total EFF 1	WT	G		1135				2				X							X	X			Composite EFF 1, 2, 3, 4 at lab	006
6	GW- 031620 -JRL -Total EFF 2	WT	G		1130				2				X							X	X				007
7	GW- 031620 -JRL -Total EFF 3	WT	G		1145				2				X							X	X				008
8	GW- 031620 -JRL -Total EFF 4	WT	G		1200				2				X							X	X				009
9	GW- 031620 -JRL -Total EFF 5	WT	G		1115				1				X									X		Composite EFF 5, 6, 7 at lab	010
10	GW- 031620 -JRL -Total EFF 6	WT	G		1130				1				X									X			011
11	GW- 031620 -JRL -Total EFF 7	WT	G		1145				1													X			012

MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS

013-TB

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
4 TB HCL 3/17/20 IJ		3/16/20	1310		3-16	1310	—	L	N	L
		3-16	1600	JRL - PACE	3/17/20	8:50	2.3	X	X	X

CW MONTHLY

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI

SIGNATURE of SAMPLER:

DATE Signed: 03/16/20

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 19Feb2020 Page 1 of 1
	Document No.: **F-MN-L-213-rev.31**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: GHD

Project #: **WO#: 10511957**

PM: JMG **Due Date: 03/30/20**

CLIENT: GHD_WA

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exceptions** ☐

Tracking Number: 4934 3737 1074

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:_____ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☑ T4(0254) ☐ T5(0489) **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.4 °C **Average Corrected Temp (no temp blank only):** ☐ See Exceptions

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:** 2.3 °C _____ °C ☐ 1 Container

USDA Regulated Soil: (☑ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** 3/17/20 IJ

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other_____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☑ Water ☐ Soil ☐ Oil ☐ Other_____				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☑ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☑ No	☐ N/A	
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☐ N/A	Pace Trip Blank Lot # (if purchased): 246682

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Jenni Gross **Date:** 03/17/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: IJ

Appendix B
King County Self-Monitoring Reports (SMR)

King County

Industrial Waste Quarterly Self-Monitoring Report

Send to: King County Industrial Waste
201 S. Jackson St., Suite 513
Seattle, WA 98104-3855
Phone 206-477-5300
Email: info.KCIW@kingcounty.gov

Company Name: **Phillips 66 Company**

This form is available at www.kingcounty.gov/industrialwaste.

Please specify year: **2020** **QUARTER 1** **Sample Site No.:** **A81491** **Permit/DA No.:** **7910-01**

All units are mg/l unless otherwise noted. Note: Write in self-monitoring parameters, if not provided, e.g. Silver (Ag); delete or ignore FOG or SS, if not required.

Month	Sample Date	Sample Type C (Composite) G (Grab) BC (Batch)	benzene	ethylbenzene	toluene	xylenes	Nonpolar fats, oils & grease (FOG) (Record average only)	pH	Total Monthly Flow (gallons)
January	01/16/20	G	<0.001	<0.001	<0.001	<0.003	<6.76	7.2	
	Total volume discharged for January								3,295
February	02/06/20	G	<0.001	<0.001	<0.001	<0.003	<6.49	7.5	
	Total volume discharged for February								4,370
March	Permit 7910-01 renewed and superseded by Permit 7910-02 on 3/5/20								
	Total volume discharged for March (3/1-3/5)								1,005

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that all data requiring a laboratory analysis were analyzed by a Washington State Department of Ecology accredited laboratory for each parameter tested

Rudy Soltman
Signature of Principal Executive or Authorized Agent

3/17/2020
Date

—► Maximum daily flow from this quarter: **284** **gallons.** Date on which maximum daily flow occurred: **01/16/20**

Due Date: **First Quarter Report is due by April 15 of each year.**

Industrial Waste Monthly Self-Monitoring Report

King County

Send to: King County Industrial Waste Program
201 S. Jackson Street, Suite 513
Seattle, WA 98104-3855
Phone 206-477-5300 / FAX 206-263-3001
Email: info.KCIW@kingcounty.gov

Company Name: Phillips 66 Company **Sample Site No.** A81491 **Permit/DA No.:** 7910-02

Please Specify Month & Year: **Month:** March **2020**

This form is available at www.kingcounty.gov/industrialwaste.

All units are mg/l unless otherwise noted. Note: For cyanide, circle test performed - amenable or total ▼

Sample Date (circle)	Sample Type C (Composite) G (grab) BC (batch)	pH Min	pH Max	Benzene, B	Toluene, T	Ethylbenzene, E	Xylenes, Totals, T	Nonpolar Fats, Oils, & Grease (Average of 3 grabs)	Daily Flow (GPD) Industrial	Notes (Indicate Batch Discharges)
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
(16)	G	8.3	8.3	<0.001	<0.001	<0.001	<0.003	<6.49	2,277	
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that all data requiring a laboratory analysis were analyzed by a Washington State Department of Ecology accredited laboratory for each parameter tested.

Richard Solomon 4/3/2020

Signature of Principal Executive or Authorized Agent — Date

Monthly Min pH	8.3	& Date	3/16/20
Monthly Max pH	8.3	& Date	3/16/20

PLEASE CIRCLE ALL PERMIT VIOLATIONS

Due Date: **Monthly report is due by the 15th of each month.**

Appendix C
Groundwater Monitoring Field Data Sheets

2/24/20

Well		DTP	DTW	
MW	1	—	7.42	
	2	—	7.16	
	3	—	5.30	
	4	—	4.49	
	5	—	7.65	
	6	—	8.81	
	7	—	8.49	
	8	—	8.05	
	10	—	8.25	
	11	—	4.08	
	12	—	6.35	
	13	—	4.51	
	15	—	7.12	
	16	—	5.95	
B-4		—	3.71	
B-6		—	3.96	STRONG ODOR
D-1R		—	7.32	
DPE-3		—	8.89	
	25	—	5.32	
*	26	6.27	7.72	
	27	7.04	7.11	
	28	—	6.36	
	31	—	6.95	Pump
	32	7.42	8.73	

see page 2

30 - Pump

2/24/20

	Well #	DTP	DTW	
DPE	33	—	7.18	
	34	—	5.04	
*	35	7.06	9.40	
	36	—	7.12	Pump
	38	—	5.05	ODOR
	39	7.13	9.98	
*	40	6.62	10.04	
	41	7.58	7.60	
	43	4.07	4.32	
	45	6.36	6.71	
	46	5.70	5.73	
	48	—	8.60	Pump
	49	7.80	9.00	
	50	—	7.98	SHEEN
	51	—	6.92	
	52	8.21	8.44	
	54	8.11	9.17	
	56	8.55	8.82	
	57	7.77	8.60	
EX-1		7.20	8.47	
LA1-13		—	4.55	
LA1-14		—	5.51	

Monitoring Well Record for Low-(/ Purging
(Form SP-09)

Project Data:

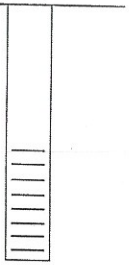
Project Name: Newton Terminal
Ref. No.: 11209385

Date: 02-25-20
Personnel: JRL

Monitoring Well Data:

Well No.: MW-1
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[1,2]:
Initial Depth to Water (m/ft): 7.42



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0830		START	Pumping								
0840	120	8.17		2.46	0.405	78	3.82	6.09	50.6		
0845	120	8.74		3.21	0.400	67	8.82	6.08	37.2	BUBBLE on DO	
0850	120	8.79		3.34	0.380	81	2.05	6.08	27.8		
0855	120	8.93		3.87	0.375	83	1.56	6.08	19.4		
0900	120	9.07		4.36	0.372	63	1.48	6.08	15.3		
0905	120	9.24		4.83	0.373	57	1.40	6.08	13.6		

Sample ID: GW-022520-JRL-MW1

Sample Time: 0910

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

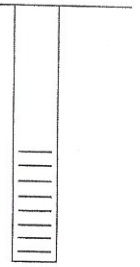
Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: JRL

Monitoring Well Data:

Well No.: MW-2
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 7.16



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0925		START	Pump								
0930	120	7.43		6.27	0.278	135	0.57	6.51	-15.3		
0935	120	7.41		6.29	0.276	127	0.56	6.50	-26.6		
0940	120	7.43		6.29	0.275	110	0.73	6.50	-34.8		
0945	120	7.43		6.40	0.275	103	0.68	6.50	-37.3		

Sample ID: GW-022520-JRL-MW2

Sample Time: 0950

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low- **…rging**
(Form SP-09)

Project Data:

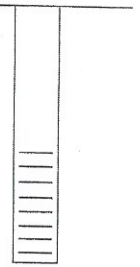
Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: JRL

Monitoring Well Data:

Well No.: MW-3
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 5.30



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1000		START PUMPING									
1005	120	5.51		2.87	0.054	107	1.67	5.47	83.9		
1010	120	5.51		2.85	0.053	101	1.69	5.49	82.9		
1015	120	5.51		2.88	0.053	83	1.73	5.45	84.3		
1020	120	5.51		2.90	0.053	76	1.84	5.49	80.8		

Sample ID: GW-022520-JRL-MW3

Sample Time: 1025

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-rging
(Form SP-09)

Project Data:

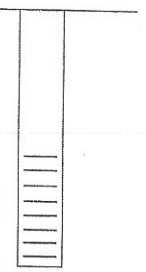
Project Name: RENTON TERMINAL
Ref. No.: 4209385

Date: 02-25-20
Personnel: JM

Monitoring Well Data:

Well No.: MW-4
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 4.49



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1040		START	PUMPING								
1045	120	4.68		5.09	0.057	163	1.81	5.51	69.6		
1050	120	4.68		5.06	0.056	132	1.35	5.47	61.8		
1055	120	4.68		5.07	0.058	117	0.82	5.45	60.1		
1100	120	4.68		5.03	0.060	123	0.58	5.45	53.8		
1105	120	4.68		5.02	0.061	115	0.48	5.44	52.9		

Sample ID: GW-022520-JM-MW4

Sample Time: 1110

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-[illegible]rging
(Form SP-09)

Project Data:

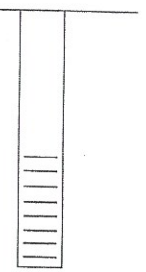
Project Name: RENTON TERMINAL
Ref. No.:

Date: 02-25-20
Personnel: JRL

Monitoring Well Data:

Well No.: MW6
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 8.81



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1200	—	START	PUMPING	—	—	—	—	—	—	—	—
1205	120	8.90		5.98	0.401	26	3.06	6.37	-38.2		
1210	120	8.90		6.20	0.404	32	2.88	6.37	-47.2		
1215	120	8.89		6.27	0.403	31	1.54	6.38	-55.3		
1220	120	8.88		6.27	0.403	28	1.50	6.37	-57.4		
1225	120	8.89		6.25	0.403	17	1.41	6.38	-60.8		

Sample ID: GW-022520-JRL-MW6

Sample Time: 1230

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Renton Terminal
Ref. No.: 11209385

Date: 02-25-20
Personnel: JR

Monitoring Well Data:

Well No.: MW-10
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[1,2]:
Initial Depth to Water (m/ft): 8.25

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1325	START	PUMPING									
1335	120	8.47		7.36	0.702	68	5.40	6.81	-58.4		
1340	120	8.53		7.67	0.707	73	1.01	6.83	-54.8		
1345	120	8.53		7.64	0.707	57	0.92	6.83	-54.5		
1350	120	8.51		7.64	0.707	53	0.89	6.83	-54.6		
1355	120	8.49		7.63	0.707	41	0.87	6.84	-54.5		

Sample ID: GW-022520-JR-MW10

Sample Time: 1400

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L*$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: DT

MW16

Monitoring Well Data:

Well No.: MW16
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 5.95

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0800	Start pump										
0830	150	7.50	1.55	9.3	0.109	7.09	0.58	8.72	-18.4		
0835		7.48	1.53	9.3	0.108	6.85	0.57	8.70	-15.3		
0840		7.49	1.54	9.4	0.109	5.11	0.55	8.69	-13.5		
0845											

Sample ID: GW-022520-DT-MW16
Sample Time: 0845

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches
(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: DT

MW 13

Monitoring Well Data:

Well No.: MW-13
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 4.51

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0915	Start pump										
0945	150	4.60	0.09	9.5	0.118	3.89	2.59	7.12	38.5		
0950	↓	4.60	0.09	9.5	0.119	4.04	2.52	7.11	37.9		
0955	↓	4.66	0.09	9.5	0.119	3.77	2.50	7.10	37.4		
1000	Sampled										

Sample ID: GW-022520-DT-MW13

Sample Time: 1000

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: DT

MW-12

Monitoring Well Data:

Well No.: MW-12
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 6.35

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1020	Start pump										
1050	150	6.60	0.25	11.2	0.203	4.34	0.12	6.52	-58.4		
1055		6.60	0.25	11.3	0.204	4.37	0.11	6.50	-60.1		
1100		6.60	0.25	11.4	0.204	3.94	0.11	6.51	-60.5		
1110	Sampled.										

Sample ID: GW-022520-DT-MW12
Sample Time: 1110

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches
(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-[illegible]rging
(Form SP-09)

MW-11

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 0209385

Date: 02-25-20
Personnel: DT

Monitoring Well Data:

Well No.: MW11
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 4.08

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1125	start pump										
1155	150	4.11	0.03	10.3	0.185	4.87	0.10	6.70	-169.4		
1200	↓	4.10	0.02	10.3	0.185	3.59	0.09	6.70	-170.5		
1205	↓	4.10	0.02	10.4	0.186	4.20	0.09	6.70	-170.7		
1210	sampled										

Sample ID: GW-022520-DT-MW11

Sample Time: 1210

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

LAI-13

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 1209385

Date: 02-25-20
Personnel: DT

Monitoring Well Data:

Well No.: LAI-13
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 4.55

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1240	start pump										
1310	150	5.02	0.47	10.2	0.174	37.2	2.13	6.81	-15.5		
1315	↓	5.04	0.49	10.2	0.175	30.8	2.16	6.82	-14.9		
1320	↓	5.04	0.49	10.3	0.178	35.0	2.17	6.82	-14.6		
1325	Sampled										

Sample ID: GW-022520-DT-LAI 13

Sample Time: 1325

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low- rging (Form SP-09)

Project Data:

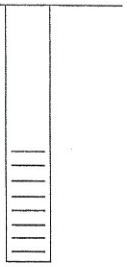
Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-25-20
Personnel: DT

Monitoring Well Data:

Well No.: LAI-14
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 5.51



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
1340	Start pump										
1400	150	5.80	0.29	10.0	0.321	12.5	0.41	6.91	-73.2		
1405	↓	5.80	0.29	10.0	0.324	12.9	0.40	6.91	-70.9		
1410	↓	5.81	0.30	9.9	0.324	11.7	0.39	6.92	-70.1		
1415											

Sample ID: GW-022520-DT-LAI-14
Sample Time: 1415

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low- **irging**
(Form SP-09)

Project Data:

Project Name: RENTON TERMINAL
Ref. No.: 1120938S

Date: 02/26/20
Personnel: DT

MW 15

Monitoring Well Data:

Well No.: MW 15
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 7.12 2/27
6.06 2/26

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0800	start pump										
0830	150	6.29	0.23	10.2	0.245	2.35	0.12	6.63	-102.2		
0835	↓	6.29	0.23	10.2	0.246	2.49	0.11	6.63	-102.3		
0840	↓	6.29	0.23	10.4	0.248	2.10	0.11	6.63	-102.7		
0845	Sample	MW15									
0850	Sample	DUP									

Sample ID: GW-022620-DT-MW15-DUP

Sample Time: 0845 (MW-15) / 0850 (DUP)

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

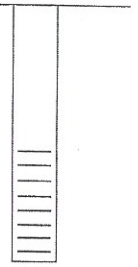
Project Name: RENTON TERMINAL
Ref. No.: 11209385

Date: 02-26-20
Personnel: JNL

Monitoring Well Data:

Well No.: D-1R
Vapour PID (ppm):
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft):
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)[1]:
Well Diameter, D (cm/in): 2"
Well Screen Volume, V_s (L)[2]:
Initial Depth to Water (m/ft): 7.32



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level[3] (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged[4]
Precision Required[5]:				±3 %	±0.005 or 0.01[6]	±10 %	±10 %	±0.1 Units	±10 mV		
0800	START	Pumping									
0810	120	7.66		7.10	0.450	27	2.08	6.59	-2.6		
0810	120	7.67		6.78	0.441	33	1.05	6.60	-55.1		
0815	120	7.67		6.82	0.442	38	0.93	6.61	-58.1		
0820	120	7.67		6.88	0.442	43	0.84	6.61	-61.1		
0825	120	7.67		6.97	0.444	36	0.67	6.62	-66.7		
0830	120	7.65		6.98	0.445	21	0.57	6.62	-69.3		
0835	120	7.65		6.98	0.445	17	0.50	6.62	-69.9		

Sample ID: GW-022620-JNL-D-1R + (MS/MSD)

Sample Time: 0840

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s=\pi*(r^2)*L$ in mL, where r (r=D/2) and L are in cm.
For Imperial units, $V_s=\pi*(r^2)*L*(2.54)^3$, where r and L are in inches

(3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.

(5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company:	GHD Services Inc.
Address:	20818 44th Ave W, Suite 190
	Lynnwood, WA 98036
Email:	christina.mcclelland@ghd.com
Phone:	425-563-6514 Fax
Requested Due Date:	*STANDARD 10 Days*

Section B — Required Project Information:

Report To:	Christina, joseph.lewandowski@ghd.com
Copy To:	eric.maise@ghd.com; jeffrey.cloud@ghd.com
	rosemarie.borths@ghd.com
Purchase Order #:	
Project Name:	P66 Renton Terminal AOC 5228
Project #:	70496

Section C — Invoice Information:

Attention:	apinvoices-340@ghd.com | Jeffrey Cloud
Company Name:	GHD Services Inc. - 340
Address:	2055 Niagara Falls Blvd. Niagara Falls, NY 14304
Pace Quote:	
Pace Project Manager:	jennifer.gross@pacelabs.com
Pace Profile #:	*40144 / 1*

Regulatory Agency

State / Location
WA / Renton

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: NWTPH-Dx + Silica Gel	NWTPH-Gx	8260 BTEX	Residual Chlorine (Y/N)	
1	GW-022620-JRL-D12	WT	G	2/26/20	0810				6 24										X	X	X		ms/msD
2	GW-022620-DT-MW15	WT	G	2/26/20	0845				6										X	X	X		
3	DUP	WT	G	—	—				6										X	X	X		
4	TRIP BLANK																				X		
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
070496-2020-02| 070496-CP-WA							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI

SIGNATURE of SAMPLER: [signature]

DATE Signed: 02/26/20

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 2

Section A — Required Client Information:

Company:	GHD Services Inc.
Address:	20818 44th Ave W, Suite 190
	Lynnwood, WA 98036
Email:	christina.mcclelland@ghd.com
Phone:	425-563-6514 Fax
Requested Due Date:	STANDARD 10 Days

Section B — Required Project Information:

Report To:	Christina, joseph.lewandowski@ghd.com
Copy To:	eric.maise@ghd.com; jeffrey.cloud@ghd.com
	rosemarie.borths@ghd.com
Purchase Order #:	
Project Name:	P66 Renton Terminal AOC 5228
Project #:	70496

Section C — Invoice Information:

Attention:	apinvoices-340@ghd.com | Jeffrey Cloud
Company Name:	GHD Services Inc. - 340
Address:	2055 Niagara Falls Blvd. Niagara Falls, NY 14304
Pace Quote:	
Pace Project Manager:	jennifer.gross@pacelabs.com
Pace Profile #:	40144 / 1

Regulatory Agency: —

State / Location: WA / Renton

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Dx + Silica Gel	NWTPH-Gx	8260 BTEX	Residual Chlorine (Y/N)
1	GW-022520-JRL-MW1	WT	G	2/25/20	0910				8										X	X	X	
2	GW-022520-DT-MW16				0845				8										X	X	X	
3	GW-022520-JRL-MW2				0950				8										X	X	X	
4	GW-022520-DT-MW13				1000				8										X	X	X	
5	GW-022520-JRL-MW3				1025				8										X	X	X	
6	GW-022520-DT-MW12				1110				8										X	X	X	
7	GW-022520-JRL-MW4				1110				8										X	X	X	
8	GW022520-DT-MW11				1210				8										X	X	X	
9	GW-022520-JRL-MW6				1230				8										X	X	X	
10	GW-022520-DT-[illegible] LAI 13				1325				8										X	X	X	
11	GW-022520-JRL-MW10				1400				8										X	X	X	
12	GW-022520-DT-LAI 14				1415				8										X	X	X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
070496-2020-02| 070496-CP-WA	GHD	2/26/20					

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI DAVE T.

SIGNATURE of SAMPLER:

DATE Signed: 02/26/20

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Appendix D
Groundwater Sampling Analytical Report

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 09, 2020

Christina McClelland
GHD Services, Inc.
20818 44th Ave W
Suite 190
Lynnwood, WA 98036

RE: Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Dear Christina McClelland:
Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Rosemarie Borths, GHD Services Inc.
Jeffrey Cloud, GHD Services Inc.
Joe Lewandowski, GHD
Eric Maise, GHD Services Inc.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Pace Analytical Services Minneapolis

A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Massachusetts DWP Certification #: via MN 027-053-137
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10509976001	**GW-022520-JRL-MW1**	Water	02/25/20 09:10	02/27/20 08:50
10509976002	**GW-022520-DT-MW16**	Water	02/25/20 08:45	02/27/20 08:50
10509976003	**GW-022520-JRL-MW2**	Water	02/25/20 09:50	02/27/20 08:50
10509976004	**GW-022520-DT-MW13**	Water	02/25/20 10:00	02/27/20 08:50
10509976005	**GW-022520-JRL-MW3**	Water	02/25/20 10:25	02/27/20 08:50
10509976006	**GW-022520-DT-MW12**	Water	02/25/20 11:10	02/27/20 08:50
10509976007	**GW-022520-JRL-MW4**	Water	02/25/20 11:10	02/27/20 08:50
10509976008	**GW-022520-DT-MW11**	Water	02/25/20 12:10	02/27/20 08:50
10509976009	**GW-022520-JRL-MW6**	Water	02/25/20 12:30	02/27/20 08:50
10509976010	**GW-022520-DT-LAI 13**	Water	02/25/20 13:25	02/27/20 08:50
10509976011	**GW-022520-JRL-MW10**	Water	02/25/20 14:00	02/27/20 08:50
10509976012	**GW-022520-DT-LAI 14**	Water	02/25/20 14:15	02/27/20 08:50
10509976013	**GW-022620-JRL-D1R**	Water	02/26/20 08:40	02/27/20 08:50
10509976014	**GW-022620-DT-MW15**	Water	02/26/20 08:45	02/27/20 08:50
10509976015	**DUP**	Water	02/25/20 00:00	02/27/20 08:50
10509976016	**Trip Blank**	Water	02/25/20 00:00	02/27/20 08:50

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10509976001	GW-022520-JRL-MW1	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976002	GW-022520-DT-MW16	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976003	GW-022520-JRL-MW2	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976004	GW-022520-DT-MW13	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976005	GW-022520-JRL-MW3	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976006	GW-022520-DT-MW12	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976007	GW-022520-JRL-MW4	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976008	GW-022520-DT-MW11	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976009	GW-022520-JRL-MW6	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976010	GW-022520-DT-LAI 13	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976011	GW-022520-JRL-MW10	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976012	GW-022520-DT-LAI 14	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976013	GW-022620-JRL-D1R	NWTPH-Dx	JVM	4	PASI-M

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Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976014	**GW-022620-DT-MW15**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976015	**DUP**	NWTPH-Dx	JVM	4	PASI-M
		NWTPH-Gx	MJD	2	PASI-M
		EPA 8260B	MM3	7	PASI-M
10509976016	**Trip Blank**	EPA 8260B	MM3	7	PASI-M

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW1 **Lab ID: 10509976001** Collected: 02/25/20 09:10 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 20:33	68334-30-5	
Motor Oil Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 20:33	64742-65-0	
Surrogates								
o-Terphenyl (S)	71	%.	50-150	1	02/28/20 18:19	02/29/20 20:33	84-15-1	
n-Triacontane (S)	80	%.	50-150	1	02/28/20 18:19	02/29/20 20:33	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/06/20 15:03		
Surrogates								
a,a,a-Trifluorotoluene (S)	88	%.	50-150	1		03/06/20 15:03	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 14:49	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 14:49	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 14:49	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 14:49	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		03/01/20 14:49	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		03/01/20 14:49	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 14:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-MW16 **Lab ID: 10509976002** Collected: 02/25/20 08:45 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 20:56	68334-30-5	
Motor Oil Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 20:56	64742-65-0	
Surrogates								
o-Terphenyl (S)	75	%.	50-150	1	02/28/20 18:19	02/29/20 20:56	84-15-1	
n-Triacontane (S)	79	%.	50-150	1	02/28/20 18:19	02/29/20 20:56	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/06/20 15:37		
Surrogates								
a,a,a-Trifluorotoluene (S)	86	%.	50-150	1		03/06/20 15:37	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 15:06	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 15:06	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 15:06	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 15:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		03/01/20 15:06	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		03/01/20 15:06	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 15:06	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW2 **Lab ID: 10509976003** Collected: 02/25/20 09:50 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	455	1	02/28/20 18:19	02/29/20 21:07	68334-30-5	
Motor Oil Range SG	ND	ug/L	455	1	02/28/20 18:19	02/29/20 21:07	64742-65-0	
Surrogates								
o-Terphenyl (S)	63	%.	50-150	1	02/28/20 18:19	02/29/20 21:07	84-15-1	
n-Triacontane (S)	64	%.	50-150	1	02/28/20 18:19	02/29/20 21:07	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**107**	ug/L	100	1		03/05/20 13:20		
Surrogates								
a,a,a-Trifluorotoluene (S)	79	%.	50-150	1		03/05/20 13:20	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 15:22	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 15:22	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 15:22	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 15:22	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%.	75-125	1		03/01/20 15:22	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		03/01/20 15:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		03/01/20 15:22	460-00-4	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-MW13 **Lab ID: 10509976004** Collected: 02/25/20 10:00 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	476	1	02/28/20 18:19	02/29/20 21:19	68334-30-5	
Motor Oil Range SG	ND	ug/L	476	1	02/28/20 18:19	02/29/20 21:19	64742-65-0	
Surrogates								
o-Terphenyl (S)	75	%.	50-150	1	02/28/20 18:19	02/29/20 21:19	84-15-1	
n-Triacontane (S)	84	%.	50-150	1	02/28/20 18:19	02/29/20 21:19	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/06/20 15:54		
Surrogates								
a,a,a-Trifluorotoluene (S)	87	%.	50-150	1		03/06/20 15:54	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 15:39	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 15:39	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 15:39	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 15:39	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		03/01/20 15:39	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		03/01/20 15:39	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		03/01/20 15:39	460-00-4	

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW3 **Lab ID: 10509976005** Collected: 02/25/20 10:25 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	400	1	02/28/20 18:19	02/29/20 21:31	68334-30-5	
Motor Oil Range SG	ND	ug/L	400	1	02/28/20 18:19	02/29/20 21:31	64742-65-0	
Surrogates								
o-Terphenyl (S)	78	%.	50-150	1	02/28/20 18:19	02/29/20 21:31	84-15-1	
n-Triacontane (S)	83	%.	50-150	1	02/28/20 18:19	02/29/20 21:31	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/06/20 16:11		
Surrogates								
a,a,a-Trifluorotoluene (S)	84	%.	50-150	1		03/06/20 16:11	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 15:56	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 15:56	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 15:56	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 15:56	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	91	%.	75-125	1		03/01/20 15:56	17060-07-0	
Toluene-d8 (S)	97	%.	75-125	1		03/01/20 15:56	2037-26-5	
4-Bromofluorobenzene (S)	90	%.	75-125	1		03/01/20 15:56	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-MW12 **Lab ID: 10509976006** Collected: 02/25/20 11:10 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	526	1	02/28/20 18:19	02/29/20 21:43	68334-30-5	
Motor Oil Range SG	ND	ug/L	526	1	02/28/20 18:19	02/29/20 21:43	64742-65-0	
Surrogates								
o-Terphenyl (S)	59	%.	50-150	1	02/28/20 18:19	02/29/20 21:43	84-15-1	
n-Triacontane (S)	63	%.	50-150	1	02/28/20 18:19	02/29/20 21:43	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/06/20 16:28		
Surrogates								
a,a,a-Trifluorotoluene (S)	82	%.	50-150	1		03/06/20 16:28	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 16:13	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 16:13	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 16:13	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 16:13	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%.	75-125	1		03/01/20 16:13	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		03/01/20 16:13	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 16:13	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW4 **Lab ID: 10509976007** Collected: 02/25/20 11:10 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 21:54	68334-30-5	
Motor Oil Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 21:54	64742-65-0	
Surrogates								
o-Terphenyl (S)	71	%.	50-150	1	02/28/20 18:19	02/29/20 21:54	84-15-1	
n-Triacontane (S)	78	%.	50-150	1	02/28/20 18:19	02/29/20 21:54	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 15:02		
Surrogates								
a,a,a-Trifluorotoluene (S)	82	%.	50-150	1		03/05/20 15:02	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 16:29	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 16:29	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 16:29	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 16:29	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	91	%.	75-125	1		03/01/20 16:29	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		03/01/20 16:29	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		03/01/20 16:29	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-MW11 **Lab ID: 10509976008** Collected: 02/25/20 12:10 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 22:06	68334-30-5	
Motor Oil Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 22:06	64742-65-0	
Surrogates								
o-Terphenyl (S)	68	%.	50-150	1	02/28/20 18:19	02/29/20 22:06	84-15-1	
n-Triacontane (S)	77	%.	50-150	1	02/28/20 18:19	02/29/20 22:06	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 15:19		
Surrogates								
a,a,a-Trifluorotoluene (S)	83	%.	50-150	1		03/05/20 15:19	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 16:46	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 16:46	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 16:46	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 16:46	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%.	75-125	1		03/01/20 16:46	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		03/01/20 16:46	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 16:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW6 **Lab ID: 10509976009** Collected: 02/25/20 12:30 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 22:17	68334-30-5	
Motor Oil Range SG	ND	ug/L	417	1	02/28/20 18:19	02/29/20 22:17	64742-65-0	
Surrogates								
o-Terphenyl (S)	73	%.	50-150	1	02/28/20 18:19	02/29/20 22:17	84-15-1	
n-Triacontane (S)	65	%.	50-150	1	02/28/20 18:19	02/29/20 22:17	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 15:36		
Surrogates								
a,a,a-Trifluorotoluene (S)	81	%.	50-150	1		03/05/20 15:36	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 17:03	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 17:03	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 17:03	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 17:03	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		03/01/20 17:03	17060-07-0	
Toluene-d8 (S)	100	%.	75-125	1		03/01/20 17:03	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125	1		03/01/20 17:03	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-LAI 13 **Lab ID: 10509976010** Collected: 02/25/20 13:25 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	588	1	02/28/20 18:19	02/29/20 22:29	68334-30-5	
Motor Oil Range SG	ND	ug/L	588	1	02/28/20 18:19	02/29/20 22:29	64742-65-0	
Surrogates								
o-Terphenyl (S)	74	%.	50-150	1	02/28/20 18:19	02/29/20 22:29	84-15-1	
n-Triacontane (S)	81	%.	50-150	1	02/28/20 18:19	02/29/20 22:29	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 15:53		
Surrogates								
a,a,a-Trifluorotoluene (S)	87	%.	50-150	1		03/05/20 15:53	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 17:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 17:20	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 17:20	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 17:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%.	75-125	1		03/01/20 17:20	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		03/01/20 17:20	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	75-125	1		03/01/20 17:20	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-JRL-MW10 **Lab ID: 10509976011** Collected: 02/25/20 14:00 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	392	1	02/28/20 18:19	02/29/20 22:41	68334-30-5	
Motor Oil Range SG	ND	ug/L	392	1	02/28/20 18:19	02/29/20 22:41	64742-65-0	
Surrogates								
o-Terphenyl (S)	69	%.	50-150	1	02/28/20 18:19	02/29/20 22:41	84-15-1	
n-Triacontane (S)	77	%.	50-150	1	02/28/20 18:19	02/29/20 22:41	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 16:26		
Surrogates								
a,a,a-Trifluorotoluene (S)	82	%.	50-150	1		03/05/20 16:26	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 17:37	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 17:37	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 17:37	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 17:37	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%.	75-125	1		03/01/20 17:37	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	1		03/01/20 17:37	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		03/01/20 17:37	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022520-DT-LAI 14 **Lab ID: 10509976012** Collected: 02/25/20 14:15 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx Preparation Method: EPA Mod. 3510C							
Diesel Fuel Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 22:52	68334-30-5	
Motor Oil Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 22:52	64742-65-0	
Surrogates								
o-Terphenyl (S)	72	%.	50-150	1	02/28/20 18:19	02/29/20 22:52	84-15-1	
n-Triacontane (S)	77	%.	50-150	1	02/28/20 18:19	02/29/20 22:52	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	ND	ug/L	100	1		03/05/20 17:17		
Surrogates								
a,a,a-Trifluorotoluene (S)	85	%.	50-150	1		03/05/20 17:17	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 17:53	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 17:53	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 17:53	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 17:53	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%.	75-125	1		03/01/20 17:53	17060-07-0	
Toluene-d8 (S)	96	%.	75-125	1		03/01/20 17:53	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 17:53	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022620-JRL-D1R **Lab ID: 10509976013** Collected: 02/26/20 08:40 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	435	1	02/28/20 18:19	02/29/20 23:04	68334-30-5	M1
Motor Oil Range SG	ND	ug/L	435	1	02/28/20 18:19	02/29/20 23:04	64742-65-0	M1
Surrogates								
o-Terphenyl (S)	68	%.	50-150	1	02/28/20 18:19	02/29/20 23:04	84-15-1	
n-Triacontane (S)	61	%.	50-150	1	02/28/20 18:19	02/29/20 23:04	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**565**	ug/L	100	1		03/05/20 11:22		G+
Surrogates								
a,a,a-Trifluorotoluene (S)	90	%.	50-150	1		03/05/20 11:22	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 14:32	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 14:32	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 14:32	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 14:32	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	89	%.	75-125	1		03/01/20 14:32	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		03/01/20 14:32	2037-26-5	
4-Bromofluorobenzene (S)	97	%.	75-125	1		03/01/20 14:32	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: GW-022620-DT-MW15 **Lab ID: 10509976014** Collected: 02/26/20 08:45 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	526	1	02/28/20 18:19	03/02/20 17:00	68334-30-5	
Motor Oil Range SG	ND	ug/L	526	1	02/28/20 18:19	03/02/20 17:00	64742-65-0	
Surrogates								
o-Terphenyl (S)	62	%.	50-150	1	02/28/20 18:19	03/02/20 17:00	84-15-1	
n-Triacontane (S)	50	%.	50-150	1	02/28/20 18:19	03/02/20 17:00	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**129**	ug/L	100	1		03/05/20 18:08		
Surrogates								
a,a,a-Trifluorotoluene (S)	80	%.	50-150	1		03/05/20 18:08	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**20.1**	ug/L	1.0	1		03/02/20 13:20	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/02/20 13:20	100-41-4	
Toluene	ND	ug/L	1.0	1		03/02/20 13:20	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/02/20 13:20	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	75-125	1		03/02/20 13:20	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		03/02/20 13:20	2037-26-5	
4-Bromofluorobenzene (S)	95	%.	75-125	1		03/02/20 13:20	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: DUP **Lab ID: 10509976015** Collected: 02/25/20 00:00 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
NWTPH-Dx GCS Silica Gel LV	Analytical Method: NWTPH-Dx		Preparation Method: EPA Mod. 3510C					
Diesel Fuel Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 23:51	68334-30-5	
Motor Oil Range SG	ND	ug/L	500	1	02/28/20 18:19	02/29/20 23:51	64742-65-0	
Surrogates								
o-Terphenyl (S)	65	%.	50-150	1	02/28/20 18:19	02/29/20 23:51	84-15-1	
n-Triacontane (S)	68	%.	50-150	1	02/28/20 18:19	02/29/20 23:51	638-68-6	
NWTPH-Gx GCV	Analytical Method: NWTPH-Gx							
TPH as Gas	**153**	ug/L	100	1		03/05/20 17:34		
Surrogates								
a,a,a-Trifluorotoluene (S)	83	%.	50-150	1		03/05/20 17:34	98-08-8	
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	**20.9**	ug/L	1.0	1		03/01/20 18:10	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 18:10	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 18:10	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 18:10	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%.	75-125	1		03/01/20 18:10	17060-07-0	
Toluene-d8 (S)	98	%.	75-125	1		03/01/20 18:10	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	1		03/01/20 18:10	460-00-4	

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ANALYTICAL RESULTS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Sample: Trip Blank **Lab ID: 10509976016** Collected: 02/25/20 00:00 Received: 02/27/20 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV UST	Analytical Method: EPA 8260B							
Benzene	ND	ug/L	1.0	1		03/01/20 14:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		03/01/20 14:16	100-41-4	
Toluene	ND	ug/L	1.0	1		03/01/20 14:16	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		03/01/20 14:16	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%.	75-125	1		03/01/20 14:16	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	1		03/01/20 14:16	2037-26-5	
4-Bromofluorobenzene (S)	98	%.	75-125	1		03/01/20 14:16	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

QC Batch: 663387 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10509976003, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976014, 10509976015

METHOD BLANK: 3559016 Matrix: Water
Associated Lab Samples: 10509976003, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976014, 10509976015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/05/20 11:04	
a,a,a-Trifluorotoluene (S)	%.	90	50-150	03/05/20 11:04	

METHOD BLANK: 3559017 Matrix: Water
Associated Lab Samples: 10509976003, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976014, 10509976015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/05/20 13:54	
a,a,a-Trifluorotoluene (S)	%.	85	50-150	03/05/20 13:54	

LABORATORY CONTROL SAMPLE & LCSD: 3559018 3559019

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1090	933	109	93	72-130	15	20	
a,a,a-Trifluorotoluene (S)	%.				104	93	50-150			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3559049 3559050

Parameter	Units	10509976013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH as Gas	ug/L	565	1000	1000	1560	1600	99	103	68-146	3	30	G+
a,a,a-Trifluorotoluene (S)	%.						100	97	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

QC Batch: 663664 Analysis Method: NWTPH-Gx
QC Batch Method: NWTPH-Gx Analysis Description: NWTPH-Gx Water
Associated Lab Samples: 10509976001, 10509976002, 10509976004, 10509976005, 10509976006

METHOD BLANK: 3560419 Matrix: Water
Associated Lab Samples: 10509976001, 10509976002, 10509976004, 10509976005, 10509976006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH as Gas	ug/L	ND	100	03/06/20 14:46	
a,a,a-Trifluorotoluene (S)	%.	81	50-150	03/06/20 14:46	

LABORATORY CONTROL SAMPLE & LCSD: 3560420 3560421

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	1000	1060	972	106	97	72-130	8	20	
a,a,a-Trifluorotoluene (S)	%.				104	93	50-150			

SAMPLE DUPLICATE: 3560880

Parameter	Units	10509976001 Result	Dup Result	RPD	Max RPD	Qualifiers
TPH as Gas	ug/L	ND	ND		30	
a,a,a-Trifluorotoluene (S)	%.	88	86			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

QC Batch: 662640 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10509976001, 10509976002, 10509976003, 10509976004, 10509976005, 10509976006, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976015, 10509976016

METHOD BLANK: 3555680 Matrix: Water
Associated Lab Samples: 10509976001, 10509976002, 10509976003, 10509976004, 10509976005, 10509976006, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976015, 10509976016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/01/20 13:59	
Ethylbenzene	ug/L	ND	1.0	03/01/20 13:59	
Toluene	ug/L	ND	1.0	03/01/20 13:59	
Xylene (Total)	ug/L	ND	3.0	03/01/20 13:59	
1,2-Dichloroethane-d4 (S)	%.	96	75-125	03/01/20 13:59	
4-Bromofluorobenzene (S)	%.	100	75-125	03/01/20 13:59	
Toluene-d8 (S)	%.	95	75-125	03/01/20 13:59	

LABORATORY CONTROL SAMPLE: 3555681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	21.5	108	75-125	
Ethylbenzene	ug/L	20	18.5	92	75-125	
Toluene	ug/L	20	19.2	96	75-125	
Xylene (Total)	ug/L	60	61.3	102	75-125	
1,2-Dichloroethane-d4 (S)	%.			100	75-125	
4-Bromofluorobenzene (S)	%.			101	75-125	
Toluene-d8 (S)	%.			94	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555682 3555683

Parameter	Units	10509976013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	20	20	20.8	20.8	104	104	63-125	0	30	
Ethylbenzene	ug/L	ND	20	20	19.4	18.7	97	93	66-128	4	30	
Toluene	ug/L	ND	20	20	19.1	18.4	95	91	64-125	4	30	
Xylene (Total)	ug/L	ND	60	60	60.7	58.5	101	97	64-131	4	30	
1,2-Dichloroethane-d4 (S)	%.						94	102	75-125			
4-Bromofluorobenzene (S)	%.						99	100	75-125			
Toluene-d8 (S)	%.						101	99	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

QC Batch: 662731
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260B MSV UST-WATER
Associated Lab Samples: 10509976014

METHOD BLANK: 3555919 Matrix: Water
Associated Lab Samples: 10509976014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	1.0	03/02/20 12:07	
Ethylbenzene	ug/L	ND	1.0	03/02/20 12:07	
Toluene	ug/L	ND	1.0	03/02/20 12:07	
Xylene (Total)	ug/L	ND	3.0	03/02/20 12:07	
1,2-Dichloroethane-d4 (S)	%.	100	75-125	03/02/20 12:07	
4-Bromofluorobenzene (S)	%.	97	75-125	03/02/20 12:07	
Toluene-d8 (S)	%.	101	75-125	03/02/20 12:07	

LABORATORY CONTROL SAMPLE: 3555920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	20	19.4	97	75-125	
Ethylbenzene	ug/L	20	20.9	105	75-125	
Toluene	ug/L	20	20.6	103	75-125	
Xylene (Total)	ug/L	60	62.1	104	75-125	
1,2-Dichloroethane-d4 (S)	%.			94	75-125	
4-Bromofluorobenzene (S)	%.			96	75-125	
Toluene-d8 (S)	%.			98	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3556743 3556744

Parameter	Units	10509976014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	20.1	20	20	37.1	42.1	85	110	63-125	13	30	
Ethylbenzene	ug/L	ND	20	20	19.2	21.7	93	106	66-128	12	30	
Toluene	ug/L	ND	20	20	18.2	19.3	90	95	64-125	6	30	
Xylene (Total)	ug/L	ND	60	60	56.7	60.2	94	100	64-131	6	30	
1,2-Dichloroethane-d4 (S)	%.						96	104	75-125			
4-Bromofluorobenzene (S)	%.						98	95	75-125			
Toluene-d8 (S)	%.						95	92	75-125			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

QC Batch: 662546 Analysis Method: NWTPH-Dx
QC Batch Method: EPA Mod. 3510C Analysis Description: NWTPH-Dx GCS LV SG
Associated Lab Samples: 10509976001, 10509976002, 10509976003, 10509976004, 10509976005, 10509976006, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976014, 10509976015

METHOD BLANK: 3555162 Matrix: Water
Associated Lab Samples: 10509976001, 10509976002, 10509976003, 10509976004, 10509976005, 10509976006, 10509976007, 10509976008, 10509976009, 10509976010, 10509976011, 10509976012, 10509976013, 10509976014, 10509976015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Fuel Range SG	ug/L	ND	400	02/29/20 20:09	
Motor Oil Range SG	ug/L	ND	400	02/29/20 20:09	
n-Triacontane (S)	%.	85	50-150	02/29/20 20:09	
o-Terphenyl (S)	%.	81	50-150	02/29/20 20:09	

LABORATORY CONTROL SAMPLE: 3555163

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Fuel Range SG	ug/L	2000	1570	79	50-150	
Motor Oil Range SG	ug/L	2000	1770	89	50-150	
n-Triacontane (S)	%.			90	50-150	
o-Terphenyl (S)	%.			92	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555165 3555166

Parameter	Units	10509976013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Fuel Range SG	ug/L	ND	2170	2170	1100	955	41	34	50-150	15	30	M1
Motor Oil Range SG	ug/L	ND	2170	2170	1110	1000	46	41	50-150	10	30	M1
n-Triacontane (S)	%.						74	63	50-150			
o-Terphenyl (S)	%.						74	64	50-150			

SAMPLE DUPLICATE: 3555164

Parameter	Units	10509976001 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Fuel Range SG	ug/L	ND	ND		30	
Motor Oil Range SG	ug/L	ND	ND		30	
n-Triacontane (S)	%.	80	70			
o-Terphenyl (S)	%.	71	71			

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

G+	Late peaks present outside the GRO window.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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METHOD CROSS REFERENCE TABLE

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Parameter	Matrix	Analytical Method	Preparation Method
8260B MSV UST	Water	SW-846 8260B/5030B	N/A

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10509976001	**GW-022520-JRL-MW1**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976002	**GW-022520-DT-MW16**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976003	**GW-022520-JRL-MW2**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976004	**GW-022520-DT-MW13**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976005	**GW-022520-JRL-MW3**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976006	**GW-022520-DT-MW12**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976007	**GW-022520-JRL-MW4**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976008	**GW-022520-DT-MW11**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976009	**GW-022520-JRL-MW6**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976010	**GW-022520-DT-LAI 13**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976011	**GW-022520-JRL-MW10**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976012	**GW-022520-DT-LAI 14**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976013	**GW-022620-JRL-D1R**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976014	**GW-022620-DT-MW15**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976015	**DUP**	EPA Mod. 3510C	662546	NWTPH-Dx	662646
10509976001	**GW-022520-JRL-MW1**	NWTPH-Gx	663664		
10509976002	**GW-022520-DT-MW16**	NWTPH-Gx	663664		
10509976003	**GW-022520-JRL-MW2**	NWTPH-Gx	663387		
10509976004	**GW-022520-DT-MW13**	NWTPH-Gx	663664		
10509976005	**GW-022520-JRL-MW3**	NWTPH-Gx	663664		
10509976006	**GW-022520-DT-MW12**	NWTPH-Gx	663664		
10509976007	**GW-022520-JRL-MW4**	NWTPH-Gx	663387		
10509976008	**GW-022520-DT-MW11**	NWTPH-Gx	663387		
10509976009	**GW-022520-JRL-MW6**	NWTPH-Gx	663387		
10509976010	**GW-022520-DT-LAI 13**	NWTPH-Gx	663387		
10509976011	**GW-022520-JRL-MW10**	NWTPH-Gx	663387		
10509976012	**GW-022520-DT-LAI 14**	NWTPH-Gx	663387		
10509976013	**GW-022620-JRL-D1R**	NWTPH-Gx	663387		
10509976014	**GW-022620-DT-MW15**	NWTPH-Gx	663387		
10509976015	**DUP**	NWTPH-Gx	663387		
10509976001	**GW-022520-JRL-MW1**	EPA 8260B	662640		
10509976002	**GW-022520-DT-MW16**	EPA 8260B	662640		
10509976003	**GW-022520-JRL-MW2**	EPA 8260B	662640		
10509976004	**GW-022520-DT-MW13**	EPA 8260B	662640		
10509976005	**GW-022520-JRL-MW3**	EPA 8260B	662640		
10509976006	**GW-022520-DT-MW12**	EPA 8260B	662640		
10509976007	**GW-022520-JRL-MW4**	EPA 8260B	662640		
10509976008	**GW-022520-DT-MW11**	EPA 8260B	662640		
10509976009	**GW-022520-JRL-MW6**	EPA 8260B	662640		
10509976010	**GW-022520-DT-LAI 13**	EPA 8260B	662640		
10509976011	**GW-022520-JRL-MW10**	EPA 8260B	662640		
10509976012	**GW-022520-DT-LAI 14**	EPA 8260B	662640		
10509976013	**GW-022620-JRL-D1R**	EPA 8260B	662640		
10509976014	**GW-022620-DT-MW15**	EPA 8260B	662731		
10509976015	**DUP**	EPA 8260B	662640		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 70496 P66 Renton Terminal AOC
Pace Project No.: 10509976

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10509976016	**Trip Blank**	EPA 8260B	662640		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services Inc.	Report To:	Christina, joseph.lewandowski@ghd.com	Attention:	apinvoices-340@ghd.com | Jeffrey Cloud
Address:	20818 44th Ave W, Suite 190	Copy To:	eric.maise@ghd.com; jeffrey.cloud@ghd.com	Company Name:	GHD Services Inc. - 340
	Lynnwood, WA 98036		rosemarie.borths@ghd.com	Address:	2055 Niagara Falls Blvd. Niagara Falls, NY 14304
Email:	christina.mcclelland@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	425-563-6514 Fax	Project Name:	P66 Renton Terminal AOC 5228	Pace Project Manager:	jennifer.gross@pacelabs.com
Requested Due Date:	STANDARD 10 Days	Project #:	70496	Pace Profile #:	40144 / 1

Regulatory Agency

State / Location: WA / Renton

WO# : 10509976

10509976

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Dx + Silica Gel	NWTPH-Gx	8260 BTEX	Residual Chl	
1	GW-022520-JRL-MW1	WT	G	2/25/20	0910				8										X	X	X			001
2	GW-022520-DT-MW16				0845				8										X	X	X			002
3	GW-022520-JRL-MW2				0950				8										X	X	X			003
4	GW-022520-DT-MW13				1000				8										X	X	X			004
5	GW-022520-JRL-MW3				1025				8										X	X	X			005
6	GW-022520-DT-MW12				1110				8										X	X	X			006
7	GW-022520-JRL-MW4				1110				8										X	X	X			007
8	GW022520-DT-MW11				1210				8										X	X	X			008
9	GW-022520-JRL-MW6				1230				8										X	X	X			009
10	GW-022520-DT-[redacted] LAI 13				1325				8										X	X	X			010
11	GW-022520-JRL-MW10				1400				8										X	X	X			011
12	GW-022520-DT-LAI 14				1415				8										X	X	X			012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
070496-2020-02 070496-CP-WA	GHD	2/26/20	1230		2-26	1230	-	Y	N	Y
		2-26	1200	Pace	2/27/200	750	*	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI DAVE T.

SIGNATURE of SAMPLER: DATE Signed: 02/26/20

* 0.7, 0.9, 3.1 °C

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	GHD Services inc.	Report To:	Christina, joseph.lewandowski@ghd.com	Attention:	apinvoices-340@ghd.com | Jeffrey Cloud
Address:	20818 44th Ave W, Suite 190	Copy To:	eric.maise@ghd.com; jeffrey.cloud@ghd.com	Company Name:	GHD Services Inc. - 340
	Lynnwood, WA 98036		rosemarie.borths@ghd.com	Address:	2055 Niagara Falls Blvd, Niagara Falls, NY 14304
Email:	christina.mcclelland@ghd.com	Purchase Order #:		Pace Quote:	
Phone:	425-563-6514 Fax:	Project Name:	P66 Renton Terminal AOC 5228	Pace Project Manager:	jennifer.gross@pacelabs.com
Requested Due Date:	STANDARD 10 Days	Project #:	70496	Pace Profile #:	40144 / 1

Regulatory Agency

State / Location: WA / Renton

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solio	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NWTPH-Dx + Silica Gel	NWTPH-Gx	8260 BTEX	Residual Chlorine (Y/N)	
1	GW-022620-JRL-D-1R	WT	G	2/26/20	0840				8										X	X	X		MS/MSD 013
2	GW-022620-DT-MW15	WT	G	2/26/20	0845				8										X	X	X		014
3	DUP	WT	G	—	—				8										X	X	X		015
4	TRIP BLANK								6												X		016
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
070496-2020-02 | 070496-CP-WA				Pace	2/27/2020	850	*	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JOE LEWANDOWSKI

SIGNATURE of SAMPLER: [signature]

DATE Signed: 02/26/20

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

* 0.7, 0.9, 3.1°C

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 19Feb2020 Page 1 of 1
	Document No.: **F-MN-L-213-rev.31**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: GHD Services, Inc. **Project #** WO#: 10509976

PM: JMG **Due Date:** 03/11/20

CLIENT: GHD_WA

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number:

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☒Other: PB **Temp Blank?** ☒Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☒T4(0254) ☐T5(0489) **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 0.6, 0.7, 3.0 °C **Average Corrected Temp (no temp blank only):** ☐See Exceptions

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 0.7, 0.9, 3.1 °C ____ °C ☐1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** GN2 2/27/2020

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒Water ☐Soil ☐Oil ☐Other_____	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒Yes	☐No	☐N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	NO headspace
Trip Blank Present?	☒Yes	☐No	☐N/A	14.
Trip Blank Custody Seals Present?	☒Yes	☐No	☐N/A	Pace Trip Blank Lot # (if purchased): 246692

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ Jenni Gross _____ **Date:** 02/28/20

Note: Whenever there is a discrepancy affecting ompliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GN2 2

Pace Analytical®	Document Name: **SCUR Exception Form**	Document Revised: 06Feb2020 Page 1 of 1
	Document No.: **F-MN-C-298-Rev.03**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	
1456 2240 1198	0.7
" 1202	0.9
" 1187	3.1

Other Issues		
Issue Type: **Sample ID**	**Container Type**	**# of Containers**

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Appendix E
Data Validation Memo

Memorandum

March 30, 2020

To:	Christina McClelland	Ref. No.:	11209385
From:	Jeffrey Cloud/eew/1-NF	Tel:	206-914-3141
cc:	Eric Maise, Joe Lewandowski		

Subject: **Analytical Results and Reduced Validation of Report 10509976**
Quarterly Groundwater Sampling
Phillips 66 – Renton Terminal
Renton, Washington
February 2020

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Quarterly Groundwater Sampling at the Renton Terminal site in Renton, Washington during February 2020. Samples were submitted to Pace Analytical Services, located in Minneapolis, Minnesota. A sample collection and analysis summary is presented in Table 1. A summary of the analytical methodology is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, laboratory duplicate data, recovery data from surrogate spikes, laboratory control samples, matrix spikes and field QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and applicable guidance from the document entitled "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540 R 2016 002, September 2016.

2. Sample Holding Time and Preservation

The sample holding time criteria and sample preservation requirements for the analyses are summarized in the methods. The sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All sample containers were properly preserved, delivered on ice and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC), gasoline range organics (GRO) and diesel range organics (DRO)/motor oil range organics (ORO) analysis were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Surrogate recoveries were assessed against the control limits. All surrogate recoveries met the associated criteria.

5. Laboratory Control Sample Analyses

Laboratory control samples (LCS)/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS and LCS/LCSD contained all analytes of interest. All LCS and LCS/LCSD recoveries and RPDs were within associated control limits, demonstrating acceptable analytical accuracy and precision (where applicable).

6. Matrix Spike/Matrix Spike Duplicate Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as matrix spike/matrix spike duplicate (MS/MSD) samples. The RPD between the MS and MSD is used to assess analytical precision. MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with the analytes of interest. All percent recoveries and RPD values were within the associated control limits, demonstrating acceptable analytical accuracy and precision with the exception of a few low recoveries. The associated sample results were qualified as estimated due to the implied low bias (see Table 4).

7. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory as specified in Table 1. All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

8. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample and one field duplicate sample set.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for analysis. All results were non-detect for the analytes of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with the duplicate sample must be less than 50 percent. If the reported concentration in both the investigative sample and its duplicate are less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

9. Analyte Reporting

The laboratory did not report any detected concentrations below the laboratory's RL. Non-detect results were presented as non-detect at the RL in Table 3.

10. Conclusion

Based on the assessment detailed in the foregoing, the summarized data are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

					Analysis/Parameters			
Sample Identification	**Location**	**Matrix**	**Collection Date (mm/dd/yyyy)**	**Collection Time (hr:min)**	**DRO/ORO**	**GRO**	**VOCs**	**Comments**
GW-022620-JRL-D1R	D-1R	Water	02/26/2020	08:40	X	X	X	MS/MSD
GW-022520-DT-LAI 13	LAI-13	Water	02/25/2020	13:25	X	X	X	
GW-022520-DT-LAI 14	LAI-14	Water	02/25/2020	14:15	X	X	X	
GW-022520-JRL-MW1	MW-1	Water	02/25/2020	09:10	X	X	X	DUP
GW-022520-JRL-MW2	MW-2	Water	02/25/2020	09:50	X	X	X	
GW-022520-JRL-MW3	MW-3	Water	02/25/2020	10:25	X	X	X	
GW-022520-JRL-MW4	MW-4	Water	02/25/2020	11:10	X	X	X	
GW-022520-JRL-MW6	MW-6	Water	02/25/2020	12:30	X	X	X	
GW-022520-JRL-MW10	MW-10	Water	02/25/2020	14:00	X	X	X	
GW-022520-DT-MW11	MW-11	Water	02/25/2020	12:10	X	X	X	
GW-022520-DT-MW12	MW-12	Water	02/25/2020	11:10	X	X	X	
GW-022520-DT-MW13	MW-13	Water	02/25/2020	10:00	X	X	X	
GW-022620-DT-MW15	MW-15	Water	02/26/2020	08:45	X	X	X	MS/MSD
DUP	MW-15	Water	02/25/2020	--	X	X	X	FD (GW-022620-DT-MW15)
GW-022520-DT-MW16	MW-16	Water	02/25/2020	08:45	X	X	X	
Trip Blank	--	Water	02/25/2020	--			X	Trip Blank

Notes:

DUP	- Laboratory Duplicate
FD	- Field Duplicate sample of sample in parenthesis
MS/MSD	- Matrix Spike/Matrix Spike Duplicate
VOCs	- Volatile Organic Compounds
GRO	- Gasoline Range Organics
DRO/ORO	- Diesel Range Organics/Motor Oil Range Organics
"--"	- Not Applicable

Table 2

Analytical Methods
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

Parameter	Method	Matrix
Volatile Organic Compounds (VOCs)	SW-846 8260B[(1)]	Water
Gasoline Range Organics (GRO)	NWTPH-Gx[(2)]	Water
Diesel Range Organics (DRO)/Motor Oil Range Organics (ORO)	NWTPH-Dx[(2)]	Water

Notes:

(1) - SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

(2) - NWTPH - Referenced from "Washington State Department of Ecology Analytical Methods for Petroleum Hydrocarbons", Publication No. ECY 97-602, June 1997

Table 3

Analytical Results Summary
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

Location ID:		D-1R	LAI-13	LAI-14	MW-1	MW-2
Sample Name:		GW-022620-JRL-D1R	GW-022520-DT-LAI 13	GW-022520-DT-LAI 14	GW-022520-JRL-MW1	GW-022520-JRL-MW2
Sample Date:		02/26/2020	02/25/2020	02/25/2020	02/25/2020	02/25/2020
Parameters	**Unit**					
Volatile Organic Compounds						
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Total Petroleum Hydrocarbons (TPH)						
Gasoline	µg/L	565	100 U	100 U	100 U	107
Motor oil	µg/L	435 UJ	588 U	500 U	417 U	455 U
Total Petroleum Hydrocarbons - Extractable (DRO)	µg/L	435 UJ	588 U	500 U	417 U	455 U

Table 3

Analytical Results Summary
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

Location ID:		MW-3	MW-4	MW-6	MW-10	MW-11
Sample Name:		GW-022520-JRL-MW3	GW-022520-JRL-MW4	GW-022520-JRL-MW6	GW-022520-JRL-MW10	GW-022520-DT-MW11
Sample Date:		02/25/2020	02/25/2020	02/25/2020	02/25/2020	02/25/2020
Parameters	**Unit**					
Volatile Organic Compounds						
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Total Petroleum Hydrocarbons (TPH)						
Gasoline	µg/L	100 U	100 U	100 U	100 U	100 U
Motor oil	µg/L	400 U	417 U	417 U	392 U	500 U
Total Petroleum Hydrocarbons - Extractable (DRO)	µg/L	400 U	417 U	417 U	392 U	500 U

Table 3

Analytical Results Summary
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

Location ID:		MW-12	MW-13	MW-15	MW-15	MW-16
Sample Name:		GW-022520-DT-MW12	GW-022520-DT-MW13	DUP	GW-022620-DT-MW15	GW-022520-DT-MW16
Sample Date:		02/25/2020	02/25/2020	02/25/2020	02/26/2020	02/25/2020
				Duplicate		
Parameters	**Unit**					
Volatile Organic Compounds						
Benzene	µg/L	1.0 U	1.0 U	20.9	20.1	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Total Petroleum Hydrocarbons (TPH)						
Gasoline	µg/L	100 U	100 U	153	129	100 U
Motor oil	µg/L	526 U	476 U	500 U	526 U	500 U
Total Petroleum Hydrocarbons - Extractable (DRO)	µg/L	526 U	476 U	500 U	526 U	500 U

Notes:

DRO - Diesel Range Organics
U - Not detected at the associated reporting limit
UJ - Not detected; associated reporting limit is estimated

Table 4

Qualified Sample Results Due to Outlying MS/MSD Results
Quarterly Groundwater Sampling
Phillips 66 - Renton Terminal
Renton, Washington
February 2020

Parameter	Sample ID	Analyte	MS % Recovery	MSD % Recovery	RPD (percent)	Control Limits % Recovery	Control Limits RPD	Qualified Result	Units
DRO/ORO	GW-022620-JRL-D1R	Total Petroleum Hydrocarbons - Extractable (DRO)	41	34	15	50-150	30	435 UJ	µg/L
		Motor oil	46	41	10	50-150	30	435 UJ	µg/L

Notes:

MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
UJ - Not detected; associated reporting limit is estimated
DRO/ORO - Diesel Range Organics/Motor Oil Range Organics

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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