

MEMORANDUM

To:	Garth Everhart	From:	Kyle R. Sattler, L.G. (Washington) Mike F. Coenen, P.E.
Company:	Prime Realty Investors, LLC	Date:	March 18, 2022
Address:	3561 NE 215 th Court Fairview, OR 97024		
cc:	n/a		
Project No.:	PrimeReal-1-03		
RE:	Environmental Services Vista View Apartments 2075 NE 240 th Avenue Wood Village, Oregon		

This memorandum summarizes the results of environmental services performed by NV5 (formerly GeoDesign, Inc.) in 2019 at the Vista View Apartments site located at 2075 NE 240th Avenue in Wood Village, Oregon (subject property). The subject property is currently vacant and encompasses 0.76 acre. We understand future development of the subject property may include an apartment building consisting of three above-ground levels and two levels of below-grade parking. The subject property is shown relative to surrounding physical features on Figure 1. The layout of the subject property is shown on Figure 2. Acronyms and abbreviations used herein are defined at the end of this document.

During NV5's (as GeoDesign) September 2019 geotechnical investigation, five borings and four test pits (TP-1 through TP-4) were completed throughout the subject property and terminated at depths between 3 and 20.4 feet BGS.¹ In general, a layer of undocumented fill ranging from 1 foot to 2 feet thick was encountered below the ground surface. The undocumented fill consists primarily of silty and sandy soil with trace amounts of organics. In test pit TP-4, metal and asphalt concrete debris were observed to be mixed in the fill. Native soil, consisting of coarse-grained flood deposits (loose to medium dense, silty sand with gravel, cobbles, and boulders) and dense gravel (potentially associated with the Troutdale Formation) was encountered beneath the fill. The locations of the test pits are shown on Figure 2.

During geotechnical investigation activities, NV5 environmental personnel field screened soil samples continuously to the extent practical. Field screening consisted of visual and olfactory indicators and headspace vapor concentration measurements using a hand-held PID to quantitatively estimate VOC vapor concentrations.

¹ GeoDesign, Inc., 2019. *Report of Geotechnical Services; Vista View Apartments; 2075 NE 240th Avenue; Wood Village, Oregon*, dated September 6, 2019. GeoDesign Project: PrimeReal-1-01

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Based on the presence of undocumented fill at the subject property and presumably field screening observations, NV5 collected samples representative of the undocumented fill from each test pit for chemical analysis to evaluate soil management and disposal options.

The soil samples were submitted to Pace Analytical of Mt. Juliet, Tennessee, for analysis of gasoline-range hydrocarbons by Method NWTPH-GX, diesel- and oil-range hydrocarbons by Method NWTPH-Dx, VOCs by EPA Method 8260C, and RCRA 8 metals by EPA Methods 6020B/7471B. Three of the four samples (collected from test pits TP-1, TP-3, and TP-4) were further analyzed for PAHs by EPA Method 8270D-SIM, and one of the four samples (collected from test pit TP-3) was further analyzed for PCBs by EPA Method 8082A.

Based on our understanding of the subject property's redevelopment plans, the chemical analytical results were compared to DEQ CFSs and the following DEQ RBCs considered applicable for the future land use of the subject property:

- *Soil Ingestion, Dermal Contact, and Inhalation*: urban residential, construction worker, and excavation worker receptors
- *Volatilization to Outdoor Air*: urban residential receptors
- *Vapor Intrusion into Buildings*: urban residential receptors

Potable water is anticipated to be supplied to the subject property by the City of Wood Village. Therefore, the *Leaching to Groundwater* exposure pathway is not considered complete for the subject property and the *Leaching to Groundwater* RBCs are not included in the tables for comparison purposes. Local groundwater data suggests the local groundwater table is at a depth of approximately 60 feet BGS (70 feet above mean sea level).²

The results of the analytical testing indicate that gasoline-, diesel-, and oil-range hydrocarbons; VOCs; RCRA 8 metals; PAHs; and PCBs were either not detected or were detected at concentrations less than DEQ CFSs and the applicable DEQ RBCs, except for arsenic. As shown in Table 3, arsenic was detected at concentrations ranging from 3.36 to 6.30 mg/kg. Although the detected arsenic concentrations exceed the applicable DEQ *Soil Ingestion, Dermal Contact, and Inhalation* RBCs for urban residential receptors, the detected concentrations are within the range of naturally occurring arsenic in the area (less than 8.8 mg/kg, the DEQ CFS) and do not present unacceptable risk to current or future receptors at the subject property. The chemical analytical results are presented in Tables 1 through 5. The analytical laboratory reports, including chain-of-custody documentation, are presented in the Attachment.

Based on our evaluation of the chemical analytical results and our understanding of the proposed redevelopment, the undocumented fill represented by the samples collected at the subject property

² Snyder, Daniel T., 2008. Estimated Depth to Ground Water and Configuration of the Water Table in the Portland, Oregon Area. Prepared in cooperation with the City of Portland, the City of Gresham, Clackamas County's Water Environment Services, and Multnomah County. U.S. Geological Survey Scientific Investigations Report 2008-5059.

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do not currently pose unacceptable risk to human health and will not pose unacceptable risk to future receptors, including urban residents, construction workers, and excavation workers. If the planned land use for the subject property changes in the future (i.e., from urban residential to residential or commercial), the data set should be re-evaluated and compared to the applicable DEQ RBCs and CFSRs established at the time. In addition, the undocumented fill can be considered clean fill and can be handled and disposed of without restriction either on site or off site, unless physical evidence of contamination such as odor and/or staining is observed during earthwork activities. If any of the soil disturbed during future earthwork activities at the subject property exhibits physical evidence of contamination, it must be disposed of at a RCRA Subtitle D landfill.

The conclusions presented in this memorandum are based on our observations made during the field investigations and the chemical analytical data. The results of the analyses only indicate the presence or absence of those chemical constituents analyzed in those discrete sample locations. It is always possible that contamination could exist between the widely spaced exploration locations.

CBS:KRS:MFC:kt

Attachments

One copy submitted (via email only)

Document ID: PrimeReal-1-03-031822-envm.docx

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FIGURES

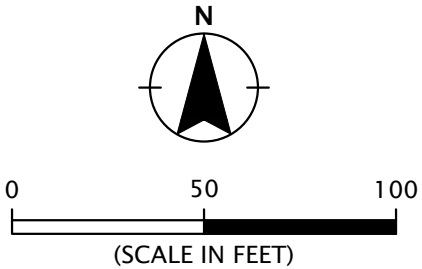


LEGEND:

SUBJECT PROPERTY BOUNDARY

TP-1

TEST PIT



SITE PLAN BASED ON AERIAL PHOTOGRAPH
OBTAINED FROM GOOGLE EARTH PRO®
MARCH 15, 2022

N V 5	SITE PLAN		FIGURE 2
	PRIMEREAL-1-03	VISTA VIEW APARTMENTS WOOD VILLAGE, OR	

TABLES

TABLE 1
Summary of Soil Sample Chemical Analytical Results
Petroleum Hydrocarbons
Vista View Apartments
2075 NE 240th Avenue
Wood Village, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	Gasoline-Range Hydrocarbons Method NWTPH-Gx (mg/kg)	Diesel- and Oil-Range Hydrocarbons Method NWTPH-Dx (mg/kg)	
			Diesel- Range	Oil- Range
TP-1(0-1)	08/02/19	2.70 U	8.06	32.6
TP-2(0.5-1.5)	08/02/19	4.93 U	5.67 U	14.2 U
TP-3(0-1)	08/02/19	2.67 U	20.3	63.6
TP-4(1-2)	08/02/19	2.66 U	10.6	43.7
DEQ Generic RBCs¹				
Soil Ingestion, Dermal Contact, and Inhalation				
Urban Residential		2,500	2,200	NE
Construction Worker		9,700	4,600	NE
Excavation Worker		>Max	>Max	NE
Volatilization to Outdoor Air				
Urban Residential		5,900	>Max	NE
Vapor Intrusion into Buildings				
Urban Residential		94	>Max	NE
DEQ CFSLS²		31	1,100	NE
Notes: 1. DEQ Generic RBCs dated May 2018 2. DEQ CFSLS dated February 21, 2019 >Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario. U: Not detected. Reporting or detection limit shown. Bolding indicates analyte detection.				

TABLE 2 Summary of Soil Sample Chemical Analytical Results VOCs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon														
Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260C (mg/kg)												
		Acetone	Benzene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Tetrachloride	Chlorobenzene	
TP-1(0-1)	08/02/19	0.0270 U	0.00108 U	0.0135 U	0.00270 U	0.0270 U	0.0135 U	0.0695 B	0.0135 U	0.0135 U	0.00541 U	0.00541 U	0.00270 U	
TP-2(0.5-1.5)	08/02/19	0.0493 U	0.00198 U	0.0248 U	0.00496 U	0.0496 U	0.0248 U	0.143 B	0.0248 U	0.0248 U	0.00992 U	0.00992 U	0.00496 U	
TP-3(0-1)	08/02/19	0.0267 U	0.00107 U	0.0133 U	0.00267 U	0.0267 U	0.0133 U	0.0806 B	0.0133 U	0.0133 U	0.00533 U	0.00533 U	0.00267 U	
TP-4(1-2)	08/02/19	0.0266 U	0.00107 U	0.0133 U	0.00266 U	0.0266 U	0.0133 U	0.0807 B	0.0133 U	0.0133 U	0.00533 U	0.00533 U	0.00266 U	
DEQ Generic RBCs ¹														
Soil Ingestion, Dermal Contact, and Inhalation														
Urban Residential		NE	24	NE	12	170	92	NE	NE	NE	NE	21	1,100	
Construction Worker		NE	380	NE	230	2,700	370	NE	NE	NE	NE	320	4,700	
Excavation Worker		NE	11,000	NE	6,300	74,000	10,000	NE	NE	NE	NE	8,900	130,000	
Volatilization to Outdoor Air														
Urban Residential		NE	27	NE	5.7	190	170	NE	NE	NE	NE	35	>Csat	
Vapor Intrusion into Buildings														
Urban Residential		NE	0.38	NE	0.096	19	1.3	NE	NE	NE	NE	0.28	77	
DEQ CFSLS ²		1.2	0.023	2.5	0.002	0.046	0.083	72	190	350	96	0.013	2.4	

TABLE 2 Summary of Soil Sample Chemical Analytical Results VOCs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon													
Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260C (mg/kg)											
		Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	1,2-Dibromo-3-chloropropane	Dibromochloromethane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
TP-1(0-1)	08/02/19	0.00541 U	0.00270 U	0.0135 U	0.00270 U	0.00541 U	0.0270 U	0.00270 U	0.00270 U	0.00541 U	0.00541 U	0.00541 U	0.00541 U
TP-2(0.5-1.5)	08/02/19	0.00992 U	0.00496 U	0.0248 U	0.00496 U	0.00992 U	0.0496 U	0.00496 U	0.00496 U	0.00992 U	0.00992 U	0.00992 U	0.00992 U
TP-3(0-1)	08/02/19	0.00533 U	0.00267 U	0.0133 U	0.00267 U	0.00533 U	0.0267 U	0.00267 U	0.00267 U	0.00533 U	0.00533 U	0.00533 U	0.00533 U
TP-4(1-2)	08/02/19	0.00533 U	0.00266 U	0.0133 U	0.00266 U	0.00533 U	0.0266 U	0.00266 U	0.00266 U	0.00533 U	0.00533 U	0.00533 U	0.00533 U
DEQ Generic RBCs ¹													
Soil Ingestion, Dermal Contact, and Inhalation													
Urban Residential		320,000	22	2,900	NE	NE	NE	12	0.53	NE	4,400	NE	62
Construction Worker		>Max	410	25,000	NE	NE	NE	210	9.0	NE	20,000	NE	1,300
Excavation Worker		>Max	11,000	700,000	NE	NE	NE	5,800	250	NE	560,000	NE	36,000
Volatilization to Outdoor Air													
Urban Residential		>Csat	9.2	>Csat	NE	NE	NE	7.8	0.35	NE	>Csat	NE	19
Vapor Intrusion into Buildings													
Urban Residential		>Csat	0.074	24	NE	NE	NE	0.53	0.028	NE	>Csat	NE	2.3
DEQ CFSLS ²		310	0.0034	2.2	14	14	0.0000084	0.0024	0.00012	0.13	0.92	0.74	0.057

TABLE 2 Summary of Soil Sample Chemical Analytical Results VOCs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon																
Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260C (mg/kg)														
		Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene			
TP-1(0-1)	08/02/19	0.00270 J0	0.00270 U	0.00270 U	0.00270 U	0.00270 U	0.00541 U	0.00541 U	0.00541 U	0.00270 U	0.00270 U	0.00270 U	0.00541 U			
TP-2(0.5-1.5)	08/02/19	0.00496 J0	0.00496 U	0.00496 U	0.00496 U	0.00496 U	0.00992 U	0.00992 U	0.00992 U	0.00496 U	0.00496 U	0.00496 U	0.00992 U			
TP-3(0-1)	08/02/19	0.00267 J0	0.00267 U	0.00267 U	0.00267 U	0.00267 U	0.00533 U	0.00533 U	0.00533 U	0.00267 U	0.00267 U	0.00267 U	0.00533 U			
TP-4(1-2)	08/02/19	0.00266 J0	0.00266 U	0.00266 U	0.00266 U	0.00266 U	0.00533 U	0.00533 U	0.00533 U	0.00266 U	0.00266 U	0.00266 U	0.00533 U			
DEQ Generic RBCs ¹																
Soil Ingestion, Dermal Contact, and Inhalation																
Urban Residential	NE	190	12	3,500	310	3,100	NE	NE	NE	NE	NE	NE				
Construction Worker	NE	3,200	200	13,000	710	7,100	NE	NE	NE	NE	NE	NE				
Excavation Worker	NE	89,000	5,600	370,000	20,000	200,000	NE	NE	NE	NE	NE	NE				
Volatilization to Outdoor Air																
Urban Residential	NE	130	8.1	>Csat	>Max	>Max	NE	NE	NE	NE	NE	NE				
Vapor Intrusion into Buildings																
Urban Residential	NE	1.1	0.18	54	>Max	>Max	NE	NE	NE	NE	NE	NE				
DEQ CFSLS ²	18	0.044	0.0028	6.7	0.63	7	0.017	7.8	NE	NE	0.01	0.01				

TABLE 2 Summary of Soil Sample Chemical Analytical Results VOCs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon													
Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260C (mg/kg)											
		Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	4-Methyl-2-pentanone (MiBK)	MTBE	Methylene Chloride	Naphthalene	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	PCE
TP-1(0-1)	08/02/19	0.00270 U	0.0270 U	0.00270 U	0.0270 U	0.00108 U	0.0270 U	0.0135 J0	0.00541 U	0.0135 U	0.00270 U	0.00270 U	0.00270 U
TP-2(0.5-1.5)	08/02/19	0.00496 U	0.0496 U	0.00496 U	0.0496 U	0.00198 U	0.0496 U	0.0248 J0	0.00992 U	0.0248 U	0.00496 U	0.00496 U	0.00493 U
TP-3(0-1)	08/02/19	0.00267 U	0.0267 U	0.00267 U	0.0267 U	0.00107 U	0.0267 U	0.0133 J0	0.00533 U	0.0133 U	0.00267 U	0.00267 U	0.00267 U
TP-4(1-2)	08/02/19	0.00266 U	0.0266 U	0.00266 U	0.0266 U	0.00107 U	0.0266 U	0.0133 J0	0.00533 U	0.0133 U	0.00266 U	0.00266 U	0.00266 U
DEQ Generic RBCs ¹													
Soil Ingestion, Dermal Contact, and Inhalation													
Urban Residential		110	NE	7,000	NE	730	170	25	NE	16,000	NE	NE	540
Construction Worker		1,700	NE	27,000	NE	12,000	2,100	580	NE	56,000	NE	NE	1,800
Excavation Worker		49,000	NE	750,000	NE	320,000	58,000	16,000	NE	>Max	NE	NE	50,000
Volatilization to Outdoor Air													
Urban Residential		85	NE	>Csat	NE	810	>Csat	15	NE	>Csat	NE	NE	>Csat
Vapor Intrusion into Buildings													
Urban Residential		3.0	NE	>Csat	NE	20	48	15	NE	>Csat	NE	NE	6.6
DEQ CFSLS ²		0.22	0.016	96	9.7	0.11	0.14	0.077	72	1.2	0.013	0.0018	0.18

TABLE 2 Summary of Soil Sample Chemical Analytical Results VOCs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon														
Sample I.D. (depth in feet BGS)	Sample Date	VOCs EPA Method 8260C (mg/kg)												
		Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	TCE	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-TMB	1,3,5-TMB	Vinyl Chloride	Total Xylenes	
TP-1(0-1)	08/02/19	0.00541 U	0.00270 JO	0.0135 U	0.00270 U	0.00270 U	0.00108 U	0.00270 U	0.0135 U	0.00541 U	0.00541 U	0.00270 U	0.00703 U	
TP-2(0.5-1.5)	08/02/19	0.00992 U	0.00496 JO	0.0248 U	0.00496 U	0.00496 U	0.00198 U	0.00496 U	0.0248 U	0.00992 U	0.00992 U	0.00496 U	0.0129 U	
TP-3(0-1)	08/02/19	0.00533 U	0.00267 JO	0.0133 U	0.00267 U	0.00267 U	0.00107 U	0.00267 U	0.0133 U	0.00533 U	0.00533 U	0.00267 U	0.00693 U	
TP-4(1-2)	08/02/19	0.00533 U	0.00266 JO	0.0133 U	0.00266 U	0.00266 U	0.00107 U	0.00266 U	0.0133 U	0.00533 U	0.00533 U	0.00266 U	0.00693 U	
DEQ Generic RBCs ¹														
Soil Ingestion, Dermal Contact, and Inhalation														
Urban Residential	12,000	NE	NE	110,000	6.3	17	15,000	NE	860	860	0.80	2,900		
Construction Worker	28,000	NE	NE	470,000	54	130	69,000	NE	2,900	2,900	34	20,000		
Excavation Worker	770,000	NE	NE	>Max	1,500	3,700	>Max	NE	81,000	81,000	950	560,000		
Volatilization to Outdoor Air														
Urban Residential	>Csat	NE	NE	>Csat	6.7	33	>Csat	NE	>Csat	>Csat	6.5	>Csat		
Vapor Intrusion into Buildings														
Urban Residential	>Csat	NE	NE	>Csat	0.38	0.26	190	NE	140	98	0.053	160		
DEQ CFSLs ²	23	1.3	0.2	190	0.0063	0.013	52	0.000019	10	11	0.00057	1.4		
Notes: 1. DEQ Generic RBCs dated May 2018 2. DEQ CFSLs dated February 21, 2019 B: The same analyte is found in the associated blank. >Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present. JO: The identification of the analyte is acceptable; the reported value is an estimate. >Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario. U: Not detected. Reporting or detection limit shown. Bolding indicates analyte detection.														

TABLE 3
Summary of Soil Sample Chemical Analytical Results
RCRA 8 Total Metals
Vista View Apartments
2075 NE 240th Avenue
Wood Village, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	RCRA 8 Total Metals EPA Methods 6020B/7471B (mg/kg)									
		Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver		
TP-1(0-1)	08/02/19	3.36 01	216 J6	0.541 U	15.3	16.8	0.0324 U	0.605	0.541 U		
TP-2(0.5-1.5)	08/02/19	3.94	137	0.709 U	18.8	8.07	0.0425 U	0.709 U	0.709 U		
TP-3(0-1)	08/02/19	4.46	117	0.533 U	17.2	25.6	0.0320 U	0.533 U	0.533 U		
TP-4(1-2)	08/02/19	6.30	107	0.533 U	17.6	10.5	0.0320 U	0.533 U	0.533 U		
DEQ Generic RBCs¹											
Soil Ingestion, Dermal Contact, and Inhalation											
Urban Residential		1.0 ²	31,000	160	230,000	400	47	NE	780		
Construction Worker		15	69,000	350	530,000	800	110	NE	1,800		
Excavation Worker		420	>Max	9,700	>Max	800	2,900	NE	49,000		
Volatilization to Outdoor Air											
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV		
Vapor Intrusion into Buildings											
Urban Residential		NV	NV	NV	NV	NV	NV	NE	NV		
DEQ CFSls³		8.8	790	0.63	76	28	0.23	0.71	0.82		

Notes:

- DEQ Generic RBCs dated May 2018
 - While the detected concentrations of arsenic are greater than this RBC, they are within the range of naturally occurring arsenic concentrations in soil in this area.
 - DEQ CFSls dated February 21, 2019
- J6: The sample matrix interfered with the ability to make any accurate determination; spike value is low.
 NV: chemical is considered non-volatile
 01: The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
 U: Not detected. Reporting or detection limit shown.
 Bolding indicates analyte detection.
 Shading indicates analyte detection at a concentration greater than DEQ RBCs.

TABLE 4 Summary of Soil Sample Chemical Analytical Results PAHs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon											
Sample I.D. (depth in feet BGS)	Sample Date	PAHs EPA Method 8270D-SIM (mg/kg)									
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	2-Chloronaphthalene	Chrysene
TP-1(0-1)	08/02/19	0.00649 U	0.00649 U	0.00649 U	0.00679 J3	0.0116 J3	0.0130 J3	0.00649 U	0.0144 U, J3	0.0216 U	0.00997 U, J3
TP-3(0-1)	08/02/19	0.00640 U	0.00640 U	0.00640 U	0.0302	0.0501	0.0556	0.0141	0.0556	0.0213 U	0.0451
TP-4(1-2)	08/02/19	0.00640 U	0.00640 U	0.00640 U	0.00640 U	0.00640 U	0.00718	0.00640 U	0.00751	0.0213 U	0.00640 U
DEQ Generic RBCs ¹											
Soil Ingestion, Dermal Contact, and Inhalation											
Urban Residential		9,400	NE	47,000	2.5	0.25	2.5	25	NE	NE	250
Construction Worker		21,000	NE	110,000	170	17	170	1,700	NE	NE	17,000
Excavation Worker		590,000	NE	>Max	4,800	490	4,900	49,000	NE	NE	490,000
Volatilization to Outdoor Air											
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV
Vapor Intrusion into Buildings											
Urban Residential		>Max	NE	>Max	>Csat	NV	NV	NV	NE	NE	NV
DEQ CFSLS ²		0.25	120	6.8	0.73	0.11	1.1	11	25	230	3.1

TABLE 4 Summary of Soil Sample Chemical Analytical Results PAHs Vista View Apartments 2075 NE 240th Avenue Wood Village, Oregon										
Sample I.D. (depth in feet BGS)	Sample Date	PAHs EPA Method 8270D-SIM (mg/kg)								
		Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
TP-1(0-1)	08/02/19	0.00649 U	0.0195 J3, J5	0.00649 U	0.00920 J3	0.0216 U	0.0216 U	0.0216 U	0.00944 J3, J5	0.0229 J3, J5
TP-3(0-1)	08/02/19	0.00703	0.0726	0.00640 U	0.0368	0.0213 U	0.0213 U	0.0213 U	0.0260	0.0882
TP-4(1-2)	08/02/19	0.00640 U	0.00728	0.00640 U	0.00640 U	0.0213 U	0.0213 U	0.0213 U	0.00640 U	0.00913
DEQ Generic RBCs ¹										
Soil Ingestion, Dermal Contact, and Inhalation										
Urban Residential		0.25	4,800	6,300	2.5	NE	NE	25	NE	3,600
Construction Worker		17	10,000	14,000	170	NE	NE	580	NE	7,500
Excavation Worker		490	280,000	390,000	4,900	NE	NE	16,000	NE	210,000
Volatilization to Outdoor Air										
Urban Residential		NV	NV	>Max	NV	NE	NE	15	NE	>Max
Vapor Intrusion into Buildings										
Urban Residential		NV	NV	>Max	NV	NE	NE	15	NE	>Max
DEQ CFSLS ²		0.11	10	3.7	1.1	0.36	11	0.077	5.5	10
Notes: 1. DEQ Generic RBCs dated May 2018 2. DEQ CFSLS dated February 21, 2019 >Csat: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of Csat. Soil concentrations in excess of Csat indicate that free product might be present. J3: The associated batch QC was outside the established quality control range for precision. J5: The sample matrix interfered with the ability to make any accurate determination; spike value is high. >Max: The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg or 1,000,000 mg/L. Therefore, this substance is deemed not to pose risks in this scenario. NV: chemical is considered non-volatile U: Not detected. Reporting or detection limit shown. Bolding indicates analyte detection.										

TABLE 5
Summary of Soil Sample Chemical Analytical Results
PCBs
Vista View Apartments
2075 NE 240th Avenue
Wood Village, Oregon

Sample I.D. (depth in feet BGS)	Sample Date	PCBs EPA Method 8082A (mg/kg)						
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
TP-3(0-1)	08/02/19	0.0181 U	0.0181 U	0.0181 U	0.0181 U	0.0181 U	0.0181 U	0.0181 U
DEQ Generic RBCs ¹								
Soil Ingestion, Dermal Contact, and Inhalation								
Urban Residential		0.33						
Construction Worker		4.9						
Excavation Worker		140						
Volatilization to Outdoor Air								
Urban Residential		>Csat						
Vapor Intrusion into Buildings								
Urban Residential		>Csat						
DEQ CFSLS ²		1.1	0.0048	0.0048	0.041	0.0073	0.041	0.24

Notes:

1. DEQ Generic RBCs dated May 2018

2. DEQ CFSLS dated February 21, 2019

>C_{sat}: This soil RBC exceeds the limit of three-phase equilibrium partitioning. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of C_{sat}. Soil concentrations in excess of C_{sat} indicate that free product might be present.

U: Not detected. Reporting or detection limit shown.

ATTACHMENT

August 12, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

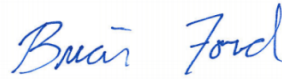
⁹ Sc

GeoDesign Inc. - Wilsonville, OR

Sample Delivery Group: L1125225
Samples Received: 08/03/2019
Project Number: FAIRWAY-1-02
Description: Fairway-1-02

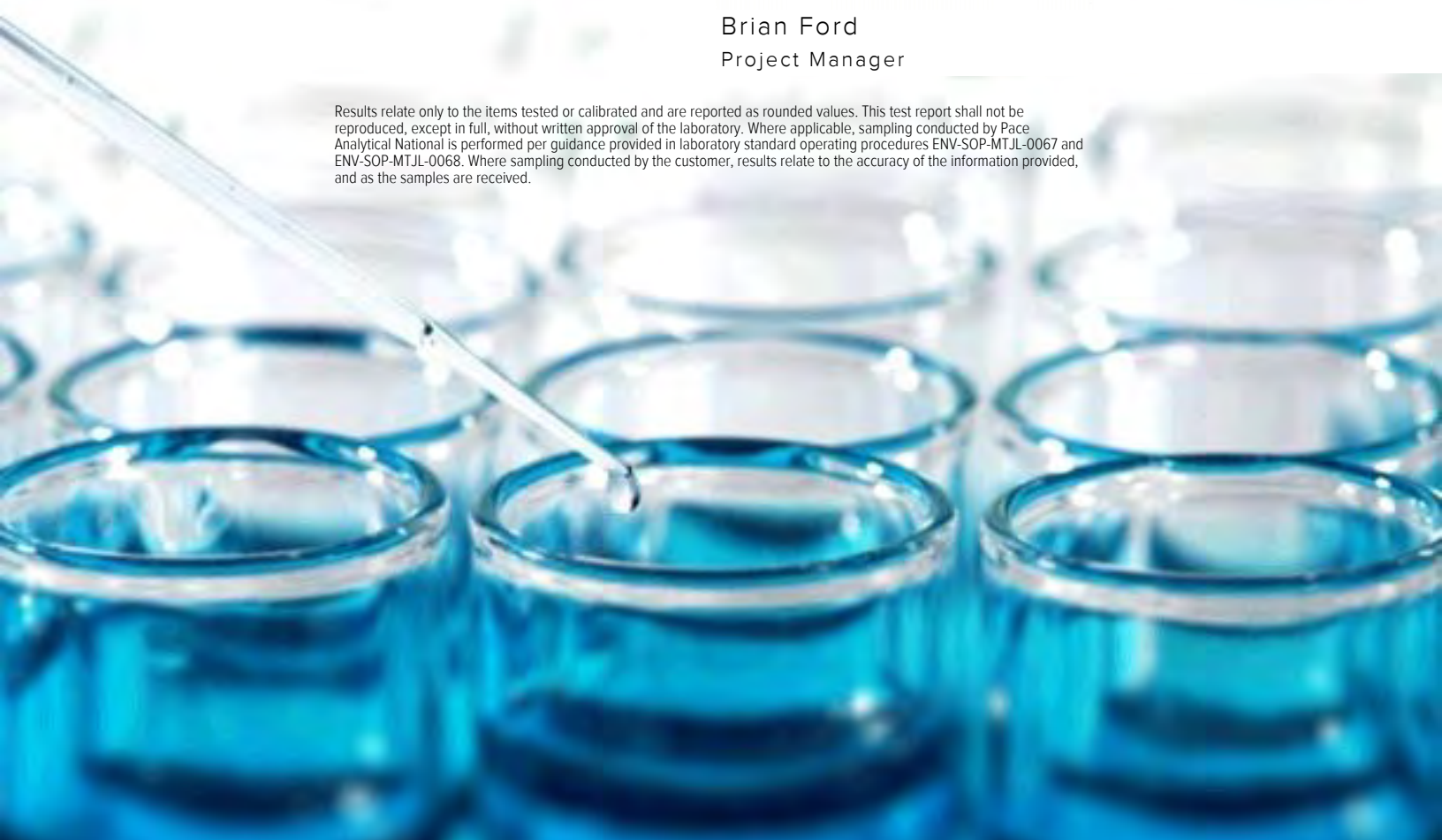
Report To: Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



TP-1(0-1) L1125225-01 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 13:40

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	KBC	Mt. Juliet, TN
Mercury by Method 7471B	WG1323457	1	08/06/19 10:02	08/06/19 20:30	TCT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1324773	5	08/07/19 17:18	08/07/19 20:52	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1326204	25	08/02/19 13:40	08/10/19 01:43	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1326748	1	08/02/19 13:40	08/11/19 13:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1327050	1	08/02/19 13:40	08/12/19 12:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1326634	1	08/11/19 13:23	08/12/19 11:54	KME	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

TP-2(0.5-1.5) L1125225-02 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 13:50

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	KBC	Mt. Juliet, TN
Mercury by Method 7471B	WG1323457	1	08/06/19 10:02	08/06/19 20:32	TCT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1324773	5	08/07/19 17:18	08/07/19 21:09	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1326204	34.75	08/02/19 13:50	08/10/19 02:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1326748	1.4	08/02/19 13:50	08/11/19 13:50	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1327050	1.39	08/02/19 13:50	08/12/19 13:17	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1326634	1	08/11/19 13:23	08/12/19 10:08	KME	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

TP-3(0-1) L1125225-03 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 14:00

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	KBC	Mt. Juliet, TN
Mercury by Method 7471B	WG1323457	1	08/06/19 10:02	08/06/19 20:34	TCT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1324773	5	08/07/19 17:18	08/07/19 21:12	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1326204	25	08/02/19 14:00	08/10/19 02:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1326748	1	08/02/19 14:00	08/11/19 14:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1327050	1	08/02/19 14:00	08/12/19 13:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1326634	1	08/11/19 13:23	08/12/19 12:07	KME	Mt. Juliet, TN

TP-4(1-2) L1125225-04 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 14:10

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	KBC	Mt. Juliet, TN
Mercury by Method 7471B	WG1323457	1	08/06/19 10:02	08/06/19 20:36	TCT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1324773	5	08/07/19 17:18	08/07/19 21:22	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1326204	25	08/02/19 14:10	08/10/19 02:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1326748	1	08/02/19 14:10	08/11/19 14:35	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1327050	1	08/02/19 14:10	08/12/19 13:59	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1326634	1	08/11/19 13:23	08/12/19 11:40	KME	Mt. Juliet, TN

ACCOUNT:

GeoDesign Inc. - Wilsonville, OR

PROJECT:

FAIRWAY-I-02

SDG:

L1125225

DATE/TIME:

08/12/19 17:13

PAGE:

3 of 25



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	08/10/2019 10:31	WG1326119

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0324	1	08/06/2019 20:30	WG1323457

Metals (ICPMS) by Method 6020B

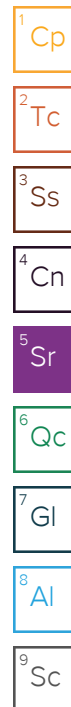
Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.36	O1	0.541	5	08/07/2019 20:52	WG1324773
Barium	216	J6	1.08	5	08/07/2019 20:52	WG1324773
Cadmium	ND		0.541	5	08/07/2019 20:52	WG1324773
Chromium	15.3		1.08	5	08/07/2019 20:52	WG1324773
Lead	16.8		0.541	5	08/07/2019 20:52	WG1324773
Selenium	0.605		0.541	5	08/07/2019 20:52	WG1324773
Silver	ND		0.541	5	08/07/2019 20:52	WG1324773

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.70	25	08/10/2019 01:43	WG1326204
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		08/10/2019 01:43	WG1326204

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0270	1	08/12/2019 12:56	WG1327050
Acrylonitrile	ND		0.0135	1	08/11/2019 13:27	WG1326748
Benzene	ND		0.00108	1	08/11/2019 13:27	WG1326748
Bromobenzene	ND		0.0135	1	08/11/2019 13:27	WG1326748
Bromodichloromethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Bromoform	ND		0.0270	1	08/11/2019 13:27	WG1326748
Bromomethane	ND		0.0135	1	08/11/2019 13:27	WG1326748
n-Butylbenzene	ND		0.0135	1	08/11/2019 13:27	WG1326748
sec-Butylbenzene	ND		0.0135	1	08/11/2019 13:27	WG1326748
tert-Butylbenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
Carbon tetrachloride	ND		0.00541	1	08/11/2019 13:27	WG1326748
Chlorobenzene	ND		0.00270	1	08/11/2019 13:27	WG1326748
Chlorodibromomethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Chloroethane	ND		0.00541	1	08/11/2019 13:27	WG1326748
Chloroform	ND		0.00270	1	08/11/2019 13:27	WG1326748
Chloromethane	ND		0.0135	1	08/11/2019 13:27	WG1326748
2-Chlorotoluene	ND		0.00270	1	08/11/2019 13:27	WG1326748
4-Chlorotoluene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,2-Dibromo-3-Chloropropane	ND		0.0270	1	08/11/2019 13:27	WG1326748
1,2-Dibromoethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Dibromomethane	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,2-Dichlorobenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,3-Dichlorobenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,4-Dichlorobenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
Dichlorodifluoromethane	ND	JO	0.00270	1	08/11/2019 13:27	WG1326748
1,1-Dichloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,2-Dichloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748





Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00270	1	08/11/2019 13:27	WG1326748
cis-1,2-Dichloroethene	ND		0.00270	1	08/11/2019 13:27	WG1326748
trans-1,2-Dichloroethene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,2-Dichloropropane	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,1-Dichloropropene	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,3-Dichloropropane	ND		0.00541	1	08/11/2019 13:27	WG1326748
cis-1,3-Dichloropropene	ND		0.00270	1	08/11/2019 13:27	WG1326748
trans-1,3-Dichloropropene	ND		0.00541	1	08/11/2019 13:27	WG1326748
2,2-Dichloropropane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Di-isopropyl ether	ND		0.00108	1	08/11/2019 13:27	WG1326748
Ethylbenzene	ND		0.00270	1	08/11/2019 13:27	WG1326748
Hexachloro-1,3-butadiene	ND		0.0270	1	08/11/2019 13:27	WG1326748
Isopropylbenzene	ND		0.00270	1	08/11/2019 13:27	WG1326748
p-Isopropyltoluene	ND		0.00541	1	08/11/2019 13:27	WG1326748
2-Butanone (MEK)	0.0695	<u>B</u>	0.0270	1	08/11/2019 13:27	WG1326748
Methylene Chloride	ND		0.0270	1	08/11/2019 13:27	WG1326748
4-Methyl-2-pentanone (MIBK)	ND		0.0270	1	08/11/2019 13:27	WG1326748
Methyl tert-butyl ether	ND		0.00108	1	08/11/2019 13:27	WG1326748
Naphthalene	ND	<u>JO</u>	0.0135	1	08/11/2019 13:27	WG1326748
n-Propylbenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
Styrene	ND		0.0135	1	08/11/2019 13:27	WG1326748
1,1,1,2-Tetrachloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,1,2,2-Tetrachloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,1,2-Trichlorotrifluoroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Tetrachloroethene	ND		0.00270	1	08/12/2019 12:56	WG1327050
Toluene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,2,3-Trichlorobenzene	ND	<u>JO</u>	0.00270	1	08/11/2019 13:27	WG1326748
1,2,4-Trichlorobenzene	ND		0.0135	1	08/11/2019 13:27	WG1326748
1,1,1-Trichloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,1,2-Trichloroethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
Trichloroethene	ND		0.00108	1	08/11/2019 13:27	WG1326748
Trichlorofluoromethane	ND		0.00270	1	08/11/2019 13:27	WG1326748
1,2,3-Trichloropropane	ND		0.0135	1	08/11/2019 13:27	WG1326748
1,2,4-Trimethylbenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,2,3-Trimethylbenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
1,3,5-Trimethylbenzene	ND		0.00541	1	08/11/2019 13:27	WG1326748
Vinyl chloride	ND		0.00270	1	08/11/2019 13:27	WG1326748
Xylenes, Total	ND		0.00703	1	08/11/2019 13:27	WG1326748
(S) Toluene-d8	104		75.0-131		08/11/2019 13:27	WG1326748
(S) Toluene-d8	112		75.0-131		08/12/2019 12:56	WG1327050
(S) 4-Bromofluorobenzene	91.6		67.0-138		08/11/2019 13:27	WG1326748
(S) 4-Bromofluorobenzene	104		67.0-138		08/12/2019 12:56	WG1327050
(S) 1,2-Dichloroethane-d4	91.8		70.0-130		08/11/2019 13:27	WG1326748
(S) 1,2-Dichloroethane-d4	101		70.0-130		08/12/2019 12:56	WG1327050

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	8.06		4.33	1	08/12/2019 11:54	WG1326634
Residual Range Organics (RRO)	32.6		10.8	1	08/12/2019 11:54	WG1326634
(S) o-Terphenyl	90.9		18.0-148		08/12/2019 11:54	WG1326634



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	70.5		1	08/10/2019 10:31	WG1326119

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0425	1	08/06/2019 20:32	WG1323457

Metals (ICPMS) by Method 6020B

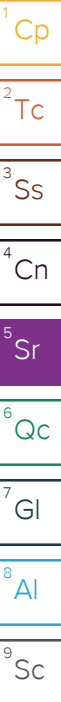
Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	3.94		0.709	5	08/07/2019 21:09	WG1324773
Barium	137		1.42	5	08/07/2019 21:09	WG1324773
Cadmium	ND		0.709	5	08/07/2019 21:09	WG1324773
Chromium	18.8		1.42	5	08/07/2019 21:09	WG1324773
Lead	8.07		0.709	5	08/07/2019 21:09	WG1324773
Selenium	ND		0.709	5	08/07/2019 21:09	WG1324773
Silver	ND		0.709	5	08/07/2019 21:09	WG1324773

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		4.93	34.75	08/10/2019 02:07	WG1326204
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		08/10/2019 02:07	WG1326204

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0493	1.39	08/12/2019 13:17	WG1327050
Acrylonitrile	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
Benzene	ND		0.00198	1.4	08/11/2019 13:50	WG1326748
Bromobenzene	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
Bromodichloromethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Bromoform	ND		0.0496	1.4	08/11/2019 13:50	WG1326748
Bromomethane	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
n-Butylbenzene	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
sec-Butylbenzene	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
tert-Butylbenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Carbon tetrachloride	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Chlorobenzene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Chlorodibromomethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Chloroethane	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Chloroform	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Chloromethane	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
2-Chlorotoluene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
4-Chlorotoluene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,2-Dibromo-3-Chloropropane	ND		0.0496	1.4	08/11/2019 13:50	WG1326748
1,2-Dibromoethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Dibromomethane	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,2-Dichlorobenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,3-Dichlorobenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,4-Dichlorobenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Dichlorodifluoromethane	ND	JO	0.00496	1.4	08/11/2019 13:50	WG1326748
1,1-Dichloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,2-Dichloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748





Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
cis-1,2-Dichloroethene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
trans-1,2-Dichloroethene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,2-Dichloropropane	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,1-Dichloropropene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,3-Dichloropropane	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
cis-1,3-Dichloropropene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
trans-1,3-Dichloropropene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
2,2-Dichloropropane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Di-isopropyl ether	ND		0.00198	1.4	08/11/2019 13:50	WG1326748
Ethylbenzene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Hexachloro-1,3-butadiene	ND		0.0496	1.4	08/11/2019 13:50	WG1326748
Isopropylbenzene	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
p-Isopropyltoluene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
2-Butanone (MEK)	0.143	B	0.0496	1.4	08/11/2019 13:50	WG1326748
Methylene Chloride	ND		0.0496	1.4	08/11/2019 13:50	WG1326748
4-Methyl-2-pentanone (MIBK)	ND		0.0496	1.4	08/11/2019 13:50	WG1326748
Methyl tert-butyl ether	ND		0.00198	1.4	08/11/2019 13:50	WG1326748
Naphthalene	ND	JO	0.0248	1.4	08/11/2019 13:50	WG1326748
n-Propylbenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Styrene	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
1,1,1,2-Tetrachloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,1,2,2-Tetrachloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,1,2-Trichlorotrifluoroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Tetrachloroethene	ND		0.00493	1.39	08/12/2019 13:17	WG1327050
Toluene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,2,3-Trichlorobenzene	ND	JO	0.00496	1.4	08/11/2019 13:50	WG1326748
1,2,4-Trichlorobenzene	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
1,1,1-Trichloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,1,2-Trichloroethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Trichloroethene	ND		0.00198	1.4	08/11/2019 13:50	WG1326748
Trichlorofluoromethane	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
1,2,3-Trichloropropane	ND		0.0248	1.4	08/11/2019 13:50	WG1326748
1,2,4-Trimethylbenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,2,3-Trimethylbenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
1,3,5-Trimethylbenzene	ND		0.00992	1.4	08/11/2019 13:50	WG1326748
Vinyl chloride	ND		0.00496	1.4	08/11/2019 13:50	WG1326748
Xylenes, Total	ND		0.0129	1.4	08/11/2019 13:50	WG1326748
(S) Toluene-d8	100		75.0-131		08/11/2019 13:50	WG1326748
(S) Toluene-d8	110		75.0-131		08/12/2019 13:17	WG1327050
(S) 4-Bromofluorobenzene	95.5		67.0-138		08/11/2019 13:50	WG1326748
(S) 4-Bromofluorobenzene	102		67.0-138		08/12/2019 13:17	WG1327050
(S) 1,2-Dichloroethane-d4	92.6		70.0-130		08/11/2019 13:50	WG1326748
(S) 1,2-Dichloroethane-d4	100		70.0-130		08/12/2019 13:17	WG1327050

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		5.67	1	08/12/2019 10:08	WG1326634
Residual Range Organics (RRO)	ND		14.2	1	08/12/2019 10:08	WG1326634
(S) o-Terphenyl	69.7		18.0-148		08/12/2019 10:08	WG1326634



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.8		1	08/10/2019 10:31	WG1326119

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0320	1	08/06/2019 20:34	WG1323457

Metals (ICPMS) by Method 6020B

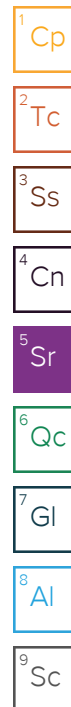
Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	4.46		0.533	5	08/07/2019 21:12	WG1324773
Barium	117		1.07	5	08/07/2019 21:12	WG1324773
Cadmium	ND		0.533	5	08/07/2019 21:12	WG1324773
Chromium	17.2		1.07	5	08/07/2019 21:12	WG1324773
Lead	25.6		0.533	5	08/07/2019 21:12	WG1324773
Selenium	ND		0.533	5	08/07/2019 21:12	WG1324773
Silver	ND		0.533	5	08/07/2019 21:12	WG1324773

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.67	25	08/10/2019 02:32	WG1326204
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		08/10/2019 02:32	WG1326204

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0267	1	08/12/2019 13:38	WG1327050
Acrylonitrile	ND		0.0133	1	08/11/2019 14:12	WG1326748
Benzene	ND		0.00107	1	08/11/2019 14:12	WG1326748
Bromobenzene	ND		0.0133	1	08/11/2019 14:12	WG1326748
Bromodichloromethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Bromoform	ND		0.0267	1	08/11/2019 14:12	WG1326748
Bromomethane	ND		0.0133	1	08/11/2019 14:12	WG1326748
n-Butylbenzene	ND		0.0133	1	08/11/2019 14:12	WG1326748
sec-Butylbenzene	ND		0.0133	1	08/11/2019 14:12	WG1326748
tert-Butylbenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
Carbon tetrachloride	ND		0.00533	1	08/11/2019 14:12	WG1326748
Chlorobenzene	ND		0.00267	1	08/11/2019 14:12	WG1326748
Chlorodibromomethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Chloroethane	ND		0.00533	1	08/11/2019 14:12	WG1326748
Chloroform	ND		0.00267	1	08/11/2019 14:12	WG1326748
Chloromethane	ND		0.0133	1	08/11/2019 14:12	WG1326748
2-Chlorotoluene	ND		0.00267	1	08/11/2019 14:12	WG1326748
4-Chlorotoluene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,2-Dibromo-3-Chloropropane	ND		0.0267	1	08/11/2019 14:12	WG1326748
1,2-Dibromoethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Dibromomethane	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,2-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,3-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,4-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
Dichlorodifluoromethane	ND	JO	0.00267	1	08/11/2019 14:12	WG1326748
1,1-Dichloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,2-Dichloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748





Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00267	1	08/11/2019 14:12	WG1326748
cis-1,2-Dichloroethene	ND		0.00267	1	08/11/2019 14:12	WG1326748
trans-1,2-Dichloroethene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,2-Dichloropropane	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,1-Dichloropropene	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,3-Dichloropropane	ND		0.00533	1	08/11/2019 14:12	WG1326748
cis-1,3-Dichloropropene	ND		0.00267	1	08/11/2019 14:12	WG1326748
trans-1,3-Dichloropropene	ND		0.00533	1	08/11/2019 14:12	WG1326748
2,2-Dichloropropane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Di-isopropyl ether	ND		0.00107	1	08/11/2019 14:12	WG1326748
Ethylbenzene	ND		0.00267	1	08/11/2019 14:12	WG1326748
Hexachloro-1,3-butadiene	ND		0.0267	1	08/11/2019 14:12	WG1326748
Isopropylbenzene	ND		0.00267	1	08/11/2019 14:12	WG1326748
p-Isopropyltoluene	ND		0.00533	1	08/11/2019 14:12	WG1326748
2-Butanone (MEK)	0.0806	<u>B</u>	0.0267	1	08/11/2019 14:12	WG1326748
Methylene Chloride	ND		0.0267	1	08/11/2019 14:12	WG1326748
4-Methyl-2-pentanone (MIBK)	ND		0.0267	1	08/11/2019 14:12	WG1326748
Methyl tert-butyl ether	ND		0.00107	1	08/11/2019 14:12	WG1326748
Naphthalene	ND	<u>JO</u>	0.0133	1	08/11/2019 14:12	WG1326748
n-Propylbenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
Styrene	ND		0.0133	1	08/11/2019 14:12	WG1326748
1,1,1,2-Tetrachloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,1,2,2-Tetrachloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,1,2-Trichlorotrifluoroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Tetrachloroethene	ND		0.00267	1	08/12/2019 13:38	WG1327050
Toluene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,2,3-Trichlorobenzene	ND	<u>JO</u>	0.00267	1	08/11/2019 14:12	WG1326748
1,2,4-Trichlorobenzene	ND		0.0133	1	08/11/2019 14:12	WG1326748
1,1,1-Trichloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,1,2-Trichloroethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
Trichloroethene	ND		0.00107	1	08/11/2019 14:12	WG1326748
Trichlorofluoromethane	ND		0.00267	1	08/11/2019 14:12	WG1326748
1,2,3-Trichloropropane	ND		0.0133	1	08/11/2019 14:12	WG1326748
1,2,4-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,2,3-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
1,3,5-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:12	WG1326748
Vinyl chloride	ND		0.00267	1	08/11/2019 14:12	WG1326748
Xylenes, Total	ND		0.00693	1	08/11/2019 14:12	WG1326748
(S) Toluene-d8	101		75.0-131		08/11/2019 14:12	WG1326748
(S) Toluene-d8	111		75.0-131		08/12/2019 13:38	WG1327050
(S) 4-Bromofluorobenzene	91.5		67.0-138		08/11/2019 14:12	WG1326748
(S) 4-Bromofluorobenzene	98.7		67.0-138		08/12/2019 13:38	WG1327050
(S) 1,2-Dichloroethane-d4	92.9		70.0-130		08/11/2019 14:12	WG1326748
(S) 1,2-Dichloroethane-d4	104		70.0-130		08/12/2019 13:38	WG1327050

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	20.3		4.26	1	08/12/2019 12:07	WG1326634
Residual Range Organics (RRO)	63.6		10.7	1	08/12/2019 12:07	WG1326634
(S) o-Terphenyl	98.6		18.0-148		08/12/2019 12:07	WG1326634



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.8		1	08/10/2019 10:31	WG1326119

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0320	1	08/06/2019 20:36	WG1323457

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	6.30		0.533	5	08/07/2019 21:22	WG1324773
Barium	107		1.07	5	08/07/2019 21:22	WG1324773
Cadmium	ND		0.533	5	08/07/2019 21:22	WG1324773
Chromium	17.6		1.07	5	08/07/2019 21:22	WG1324773
Lead	10.5		0.533	5	08/07/2019 21:22	WG1324773
Selenium	ND		0.533	5	08/07/2019 21:22	WG1324773
Silver	ND		0.533	5	08/07/2019 21:22	WG1324773

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		2.66	25	08/10/2019 02:56	WG1326204
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		08/10/2019 02:56	WG1326204

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0266	1	08/11/2019 14:35	WG1326748
Acrylonitrile	ND		0.0133	1	08/11/2019 14:35	WG1326748
Benzene	ND		0.00107	1	08/11/2019 14:35	WG1326748
Bromobenzene	ND		0.0133	1	08/11/2019 14:35	WG1326748
Bromodichloromethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Bromoform	ND		0.0266	1	08/11/2019 14:35	WG1326748
Bromomethane	ND		0.0133	1	08/11/2019 14:35	WG1326748
n-Butylbenzene	ND		0.0133	1	08/11/2019 14:35	WG1326748
sec-Butylbenzene	ND		0.0133	1	08/11/2019 14:35	WG1326748
tert-Butylbenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
Carbon tetrachloride	ND		0.00533	1	08/11/2019 14:35	WG1326748
Chlorobenzene	ND		0.00266	1	08/11/2019 14:35	WG1326748
Chlorodibromomethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Chloroethane	ND		0.00533	1	08/11/2019 14:35	WG1326748
Chloroform	ND		0.00266	1	08/11/2019 14:35	WG1326748
Chloromethane	ND		0.0133	1	08/11/2019 14:35	WG1326748
2-Chlorotoluene	ND		0.00266	1	08/11/2019 14:35	WG1326748
4-Chlorotoluene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,2-Dibromo-3-Chloropropane	ND		0.0266	1	08/11/2019 14:35	WG1326748
1,2-Dibromoethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Dibromomethane	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,2-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,3-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,4-Dichlorobenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
Dichlorodifluoromethane	ND	JO	0.00266	1	08/11/2019 14:35	WG1326748
1,1-Dichloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,2-Dichloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1-Dichloroethene	ND		0.00266	1	08/11/2019 14:35	WG1326748
cis-1,2-Dichloroethene	ND		0.00266	1	08/11/2019 14:35	WG1326748
trans-1,2-Dichloroethene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,2-Dichloropropane	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,1-Dichloropropene	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,3-Dichloropropane	ND		0.00533	1	08/11/2019 14:35	WG1326748
cis-1,3-Dichloropropene	ND		0.00266	1	08/11/2019 14:35	WG1326748
trans-1,3-Dichloropropene	ND		0.00533	1	08/11/2019 14:35	WG1326748
2,2-Dichloropropane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Di-isopropyl ether	ND		0.00107	1	08/11/2019 14:35	WG1326748
Ethylbenzene	ND		0.00266	1	08/11/2019 14:35	WG1326748
Hexachloro-1,3-butadiene	ND		0.0266	1	08/11/2019 14:35	WG1326748
Isopropylbenzene	ND		0.00266	1	08/11/2019 14:35	WG1326748
p-Isopropyltoluene	ND		0.00533	1	08/11/2019 14:35	WG1326748
2-Butanone (MEK)	0.0807	<u>B</u>	0.0266	1	08/11/2019 14:35	WG1326748
Methylene Chloride	ND		0.0266	1	08/11/2019 14:35	WG1326748
4-Methyl-2-pentanone (MIBK)	ND		0.0266	1	08/11/2019 14:35	WG1326748
Methyl tert-butyl ether	ND		0.00107	1	08/11/2019 14:35	WG1326748
Naphthalene	ND	<u>JO</u>	0.0133	1	08/11/2019 14:35	WG1326748
n-Propylbenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
Styrene	ND		0.0133	1	08/11/2019 14:35	WG1326748
1,1,1,2-Tetrachloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,1,2,2-Tetrachloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,1,2-Trichlorotrifluoroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Tetrachloroethene	ND		0.00266	1	08/12/2019 13:59	WG1327050
Toluene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,2,3-Trichlorobenzene	ND	<u>JO</u>	0.00266	1	08/11/2019 14:35	WG1326748
1,2,4-Trichlorobenzene	ND		0.0133	1	08/11/2019 14:35	WG1326748
1,1,1-Trichloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,1,2-Trichloroethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
Trichloroethene	ND		0.00107	1	08/11/2019 14:35	WG1326748
Trichlorofluoromethane	ND		0.00266	1	08/11/2019 14:35	WG1326748
1,2,3-Trichloropropane	ND		0.0133	1	08/11/2019 14:35	WG1326748
1,2,4-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,2,3-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
1,3,5-Trimethylbenzene	ND		0.00533	1	08/11/2019 14:35	WG1326748
Vinyl chloride	ND		0.00266	1	08/11/2019 14:35	WG1326748
Xylenes, Total	ND		0.00693	1	08/11/2019 14:35	WG1326748
(S) Toluene-d8	103		75.0-131		08/11/2019 14:35	WG1326748
(S) Toluene-d8	112		75.0-131		08/12/2019 13:59	WG1327050
(S) 4-Bromofluorobenzene	90.7		67.0-138		08/11/2019 14:35	WG1326748
(S) 4-Bromofluorobenzene	103		67.0-138		08/12/2019 13:59	WG1327050
(S) 1,2-Dichloroethane-d4	93.9		70.0-130		08/11/2019 14:35	WG1326748
(S) 1,2-Dichloroethane-d4	100		70.0-130		08/12/2019 13:59	WG1327050

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	10.6		4.26	1	08/12/2019 11:40	WG1326634
Residual Range Organics (RRO)	43.7		10.7	1	08/12/2019 11:40	WG1326634
(S) o-Terphenyl	76.7		18.0-148		08/12/2019 11:40	WG1326634

Method Blank (MB)

(MB) R3439505-1 08/10/19 10:31

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.000			

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

L1125235-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1125235-01 08/10/19 10:31 • (DUP) R3439505-3 08/10/19 10:31

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	71.6	74.9	1	4.50		10

Laboratory Control Sample (LCS)

(LCS) R3439505-2 08/10/19 10:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3437975-1 08/06/19 19:01				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.00280	0.0300

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3437975-2 08/06/19 19:03 • (LCSD) R3437975-3 08/06/19 19:05										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.503	0.495	101	99.0	80.0-120			1.64	20

L1125309-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1125309-01 08/06/19 19:07 • (MS) R3437975-4 08/06/19 19:09 • (MSD) R3437975-5 08/06/19 19:11												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	0.0305	0.524	0.993	98.8	193	1	75.0-125		J3 J5	61.8	20



Method Blank (MB)

(MB) R3438386-1 08/07/19 20:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.125	0.500
Barium	U		0.160	1.00
Cadmium	U		0.0800	0.500
Chromium	U		0.270	1.00
Lead	U		0.120	0.500
Selenium	U		0.190	0.500
Silver	U		0.155	0.500

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3438386-2 08/07/19 20:45 • (LCSD) R3438386-3 08/07/19 20:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	100	92.4	95.0	92.4	95.0	80.0-120			2.81	20
Barium	100	94.9	94.5	94.9	94.5	80.0-120			0.468	20
Cadmium	100	99.4	98.3	99.4	98.3	80.0-120			1.15	20
Chromium	100	95.6	97.1	95.6	97.1	80.0-120			1.56	20
Lead	100	96.2	96.7	96.2	96.7	80.0-120			0.492	20
Selenium	100	98.2	95.6	98.2	95.6	80.0-120			2.68	20
Silver	20.0	19.7	19.8	98.3	99.2	80.0-120			0.907	20

L1125225-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1125225-01 08/07/19 20:52 • (MS) R3438386-6 08/07/19 21:02 • (MSD) R3438386-7 08/07/19 21:05

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	21.6	3.36	99.1	98.0	88.5	87.5	5	75.0-125			1.14	20
Barium	21.6	216	202	229	0.000	12.1	5	75.0-125	J6	J6	12.4	20
Cadmium	21.6	ND	112	107	103	98.6	5	75.0-125			4.17	20
Chromium	21.6	15.3	112	113	89.6	90.5	5	75.0-125			0.807	20
Lead	21.6	16.8	129	114	104	90.1	5	75.0-125			12.5	20
Selenium	21.6	0.605	109	103	100	94.8	5	75.0-125			5.56	20
Silver	4.33	ND	22.2	21.2	102	98.0	5	75.0-125			4.46	20

Method Blank (MB)

(MB) R3439239-2 08/09/19 23:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C6 - C12	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	100			77.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3439239-1 08/09/19 22:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C6 - C12	5.50	5.86	107	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

Method Blank (MB)

(MB) R3439418-2 08/11/19 11:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	0.0317		0.0137	0.0250
Acrylonitrile	U		0.00190	0.0125
Benzene	U		0.000400	0.00100
Bromobenzene	U		0.00105	0.0125
Bromodichloromethane	U		0.000788	0.00250
Bromoform	U		0.00598	0.0250
Bromomethane	U		0.00370	0.0125
n-Butylbenzene	U		0.00384	0.0125
sec-Butylbenzene	U		0.00253	0.0125
tert-Butylbenzene	U		0.00155	0.00500
Carbon tetrachloride	U		0.00108	0.00500
Chlorobenzene	U		0.000573	0.00250
Chlorodibromomethane	U		0.000450	0.00250
Chloroethane	U		0.00108	0.00500
Chloroform	U		0.000415	0.00250
Chloromethane	U		0.00139	0.0125
2-Chlorotoluene	U		0.000920	0.00250
4-Chlorotoluene	U		0.00113	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00510	0.0250
1,2-Dibromoethane	U		0.000525	0.00250
Dibromomethane	U		0.00100	0.00500
1,2-Dichlorobenzene	U		0.00145	0.00500
1,3-Dichlorobenzene	U		0.00170	0.00500
1,4-Dichlorobenzene	U		0.00197	0.00500
Dichlorodifluoromethane	U		0.000818	0.00250
1,1-Dichloroethane	U		0.000575	0.00250
1,2-Dichloroethane	U		0.000475	0.00250
1,1-Dichloroethene	U		0.000500	0.00250
cis-1,2-Dichloroethene	U		0.000690	0.00250
trans-1,2-Dichloroethene	U		0.00143	0.00500
1,2-Dichloropropane	U		0.00127	0.00500
1,1-Dichloropropene	U		0.000700	0.00250
1,3-Dichloropropane	U		0.00175	0.00500
cis-1,3-Dichloropropene	U		0.000678	0.00250
trans-1,3-Dichloropropene	U		0.00153	0.00500
2,2-Dichloropropane	U		0.000793	0.00250
Di-isopropyl ether	U		0.000350	0.00100
Ethylbenzene	U		0.000530	0.00250
Hexachloro-1,3-butadiene	U		0.0127	0.0250
Isopropylbenzene	U		0.000863	0.00250

1

Cp

2

Tc

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Ss

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Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3439418-2 08/11/19 11:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00233	0.00500
2-Butanone (MEK)	0.0189	U	0.0125	0.0250
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.0100	0.0250
Methyl tert-butyl ether	U		0.000295	0.00100
Naphthalene	U		0.00312	0.0125
n-Propylbenzene	U		0.00118	0.00500
Styrene	U		0.00273	0.0125
1,1,1,2-Tetrachloroethane	U		0.000500	0.00250
1,1,2,2-Tetrachloroethane	U		0.000390	0.00250
Toluene	U		0.00125	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000675	0.00250
1,2,3-Trichlorobenzene	0.00291		0.000625	0.00250
1,2,4-Trichlorobenzene	U		0.00482	0.0125
1,1,1-Trichloroethane	U		0.000275	0.00250
1,1,2-Trichloroethane	U		0.000883	0.00250
Trichloroethene	U		0.000400	0.00100
Trichlorofluoromethane	U		0.000500	0.00250
1,2,3-Trichloropropane	U		0.00510	0.0125
1,2,3-Trimethylbenzene	U		0.00115	0.00500
1,2,4-Trimethylbenzene	U		0.00116	0.00500
1,3,5-Trimethylbenzene	U		0.00108	0.00500
Vinyl chloride	U		0.000683	0.00250
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	104			75.0-131
(S) 4-Bromofluorobenzene	98.8			67.0-138
(S) 1,2-Dichloroethane-d4	92.4			70.0-130

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3439418-1 08/11/19 10:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.669	107	10.0-160	
Acrylonitrile	0.625	0.642	103	45.0-153	
Benzene	0.125	0.126	100	70.0-123	
Bromobenzene	0.125	0.116	93.0	73.0-121	
Bromodichloromethane	0.125	0.124	99.2	73.0-121	
Bromoform	0.125	0.141	113	64.0-132	



Laboratory Control Sample (LCS)

(LCS) R3439418-1 08/11/19 10:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromomethane	0.125	0.109	87.3	56.0-147	
n-Butylbenzene	0.125	0.143	115	68.0-135	
sec-Butylbenzene	0.125	0.136	109	74.0-130	
tert-Butylbenzene	0.125	0.137	110	75.0-127	
Carbon tetrachloride	0.125	0.138	110	66.0-128	
Chlorobenzene	0.125	0.139	111	76.0-128	
Chlorodibromomethane	0.125	0.146	117	74.0-127	
Chloroethane	0.125	0.102	81.8	61.0-134	
Chloroform	0.125	0.126	100	72.0-123	
Chloromethane	0.125	0.105	83.9	51.0-138	
2-Chlorotoluene	0.125	0.125	100	75.0-124	
4-Chlorotoluene	0.125	0.123	98.4	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.132	106	59.0-130	
1,2-Dibromoethane	0.125	0.140	112	74.0-128	
Dibromomethane	0.125	0.132	105	75.0-122	
1,2-Dichlorobenzene	0.125	0.134	107	76.0-124	
1,3-Dichlorobenzene	0.125	0.135	108	76.0-125	
1,4-Dichlorobenzene	0.125	0.130	104	77.0-121	
Dichlorodifluoromethane	0.125	0.105	84.2	43.0-156	
1,1-Dichloroethane	0.125	0.123	98.2	70.0-127	
1,2-Dichloroethane	0.125	0.120	96.1	65.0-131	
1,1-Dichloroethene	0.125	0.114	91.6	65.0-131	
cis-1,2-Dichloroethene	0.125	0.129	104	73.0-125	
trans-1,2-Dichloroethene	0.125	0.121	97.2	71.0-125	
1,2-Dichloropropane	0.125	0.116	93.1	74.0-125	
1,1-Dichloropropene	0.125	0.125	100	73.0-125	
1,3-Dichloropropane	0.125	0.130	104	80.0-125	
cis-1,3-Dichloropropene	0.125	0.125	99.7	76.0-127	
trans-1,3-Dichloropropene	0.125	0.129	104	73.0-127	
2,2-Dichloropropane	0.125	0.138	111	59.0-135	
Di-isopropyl ether	0.125	0.133	106	60.0-136	
Ethylbenzene	0.125	0.131	105	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.118	94.2	57.0-150	
Isopropylbenzene	0.125	0.133	106	72.0-127	
p-Isopropyltoluene	0.125	0.141	113	72.0-133	
2-Butanone (MEK)	0.625	0.723	116	30.0-160	
Methylene Chloride	0.125	0.116	92.8	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.772	123	56.0-143	
Methyl tert-butyl ether	0.125	0.117	93.9	66.0-132	
Naphthalene	0.125	0.115	91.8	59.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3439418-1 08/11/19 10:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
n-Propylbenzene	0.125	0.127	102	74.0-126	
Styrene	0.125	0.137	110	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.143	114	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.127	102	68.0-128	
Toluene	0.125	0.133	107	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.108	86.4	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.104	83.4	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.128	103	62.0-137	
1,1,1-Trichloroethane	0.125	0.132	105	69.0-126	
1,1,2-Trichloroethane	0.125	0.133	106	78.0-123	
Trichloroethene	0.125	0.137	110	76.0-126	
Trichlorofluoromethane	0.125	0.112	89.9	61.0-142	
1,2,3-Trichloropropane	0.125	0.132	105	67.0-129	
1,2,3-Trimethylbenzene	0.125	0.132	105	74.0-124	
1,2,4-Trimethylbenzene	0.125	0.127	102	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.134	107	73.0-127	
Vinyl chloride	0.125	0.104	83.0	63.0-134	
Xylenes, Total	0.375	0.394	105	72.0-127	
(S) Toluene-d8			103	75.0-131	
(S) 4-Bromofluorobenzene			99.4	67.0-138	
(S) 1,2-Dichloroethane-d4			99.2	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3439634-2 08/12/19 12:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0137	0.0250
Tetrachloroethene	U		0.000700	0.00250
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	97.9			70.0-130

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

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Qc

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Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3439634-1 08/12/19 11:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.768	123	10.0-160	
Tetrachloroethene	0.125	0.111	88.9	70.0-136	
(S) Toluene-d8			110	75.0-131	
(S) 4-Bromofluorobenzene			105	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

Method Blank (MB)

(MB) R3439447-2 08/12/19 09:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Residual Range Organics (RRO)	U		3.33	10.0
Diesel Range Organics (DRO)	U		1.33	4.00
(S) o-Terphenyl	81.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3439447-1 08/12/19 09:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	38.8	77.6	50.0-150	
(S) o-Terphenyl			99.2	18.0-148	

L1125191-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1125191-01 08/12/19 10:21 • (MS) R3439447-3 08/12/19 10:34 • (MSD) R3439447-4 08/12/19 10:48

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	63.2	2.30	38.2	38.3	56.8	57.0	1	50.0-150			0.331	20
(S) o-Terphenyl					73.9	74.9		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

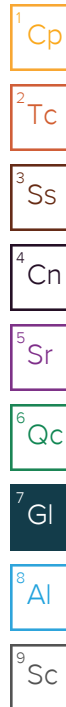
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.





Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

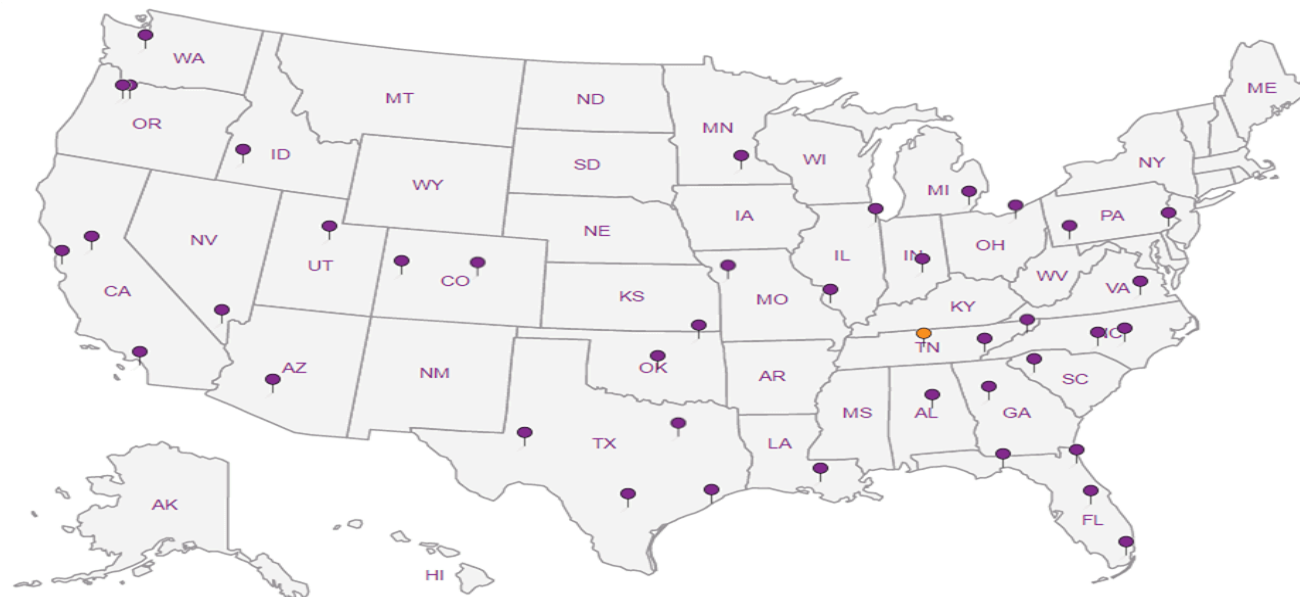
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



GeoDesign, Inc.
9450 SW Commerce Circle
Suite 300
Wilsonville, OR 97070

Billing Information:
GeoDesign, Inc.
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres.
Chk

Analysis / Container / Preservative

Chain of Custody Page of



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# L1125225
1153

Acctnum: **GEODESPOR**

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks

Sample # (lab only)

Report to:
Kyle Haggart

Email To:
khaggart@geodesigninc.com

Project
Description: **Fairway-1-02**

City/State
Collected: Wood Village, OR

Phone: **503-968-8787**
Fax:

Client Project #
Fairway-1-02

Lab Project #

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N

 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

No.
of
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	NWTPH-Gx	NWTPH-Dx	PAHs by EPA Method 8270D-SIM	VOCs by EPA Method 8260B	RCRA-8 Metals by EPA Method 6020	PCBs by EPA Method 8082	Pesticides by EPA Method 8081			
TP-1 (0-1)		SS	KTH	1340	4:10	+	+	+	+	+	+	+			
TP-1 (0-1)		SS		1340	4:10	+	+	+	+	+	+	+			-01
TP-2 (0.5-1.5)		SS		1350	4:15	+	+	+	+	+	+	+			02
TP-3 (0-1)		SS		1400	4:20	+	+	+	+	+	+	+			03
TP-4 (1-2)		SS		1410	4:25	+	+	+	+	+	+	+			04
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH Temp

Flow Other

Samples returned via:
 UPS FedEx Courier

Tracking # 41882 862A 5750

Sample Receipt Checklist

COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/h

Relinquished by: (Signature)

Date: 8.2.19

Time: 1510

Received by: (Signature)

Trip Blank Received: Yes No
HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 43.7-42.5 °C
Bottles Received: 16

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 8/3/19 Time: 8:45

Hold:

Condition:
NCF OK

August 21, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

GeoDesign Inc. - Wilsonville, OR

Sample Delivery Group: L1128480
Samples Received: 08/03/2019
Project Number: FAIRWAY-1-02
Description: Fairway-1-02

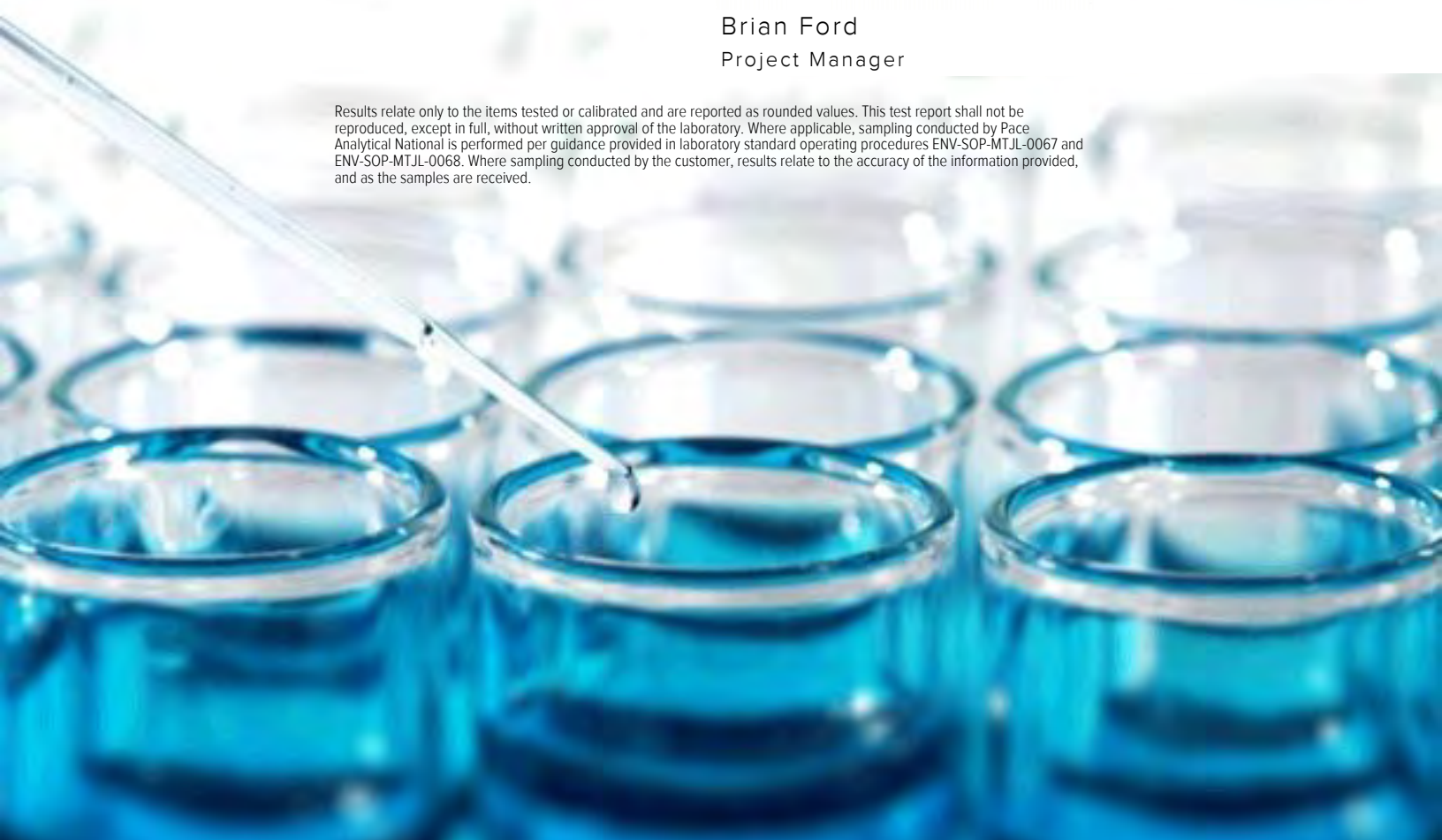
Report To: Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
TP-1(0-1) L1128480-01	5	
TP-3(0-1) L1128480-02	6	⁴ Cn
TP-4(1-2) L1128480-03	7	⁵ Sr
Qc: Quality Control Summary	8	
Total Solids by Method 2540 G-2011	8	⁶ Qc
Polychlorinated Biphenyls (GC) by Method 8082 A	9	
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	10	⁷ Gl
Gl: Glossary of Terms	13	
Al: Accreditations & Locations	14	⁸ Al
Sc: Sample Chain of Custody	15	⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



TP-1(0-1) L1128480-01 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 13:40

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	JAV	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1329669	1	08/16/19 16:18	08/17/19 09:05	JNJ	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

TP-3(0-1) L1128480-02 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 14:00

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	JAV	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1330808	1	08/19/19 07:48	08/19/19 18:14	MTJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1329669	1	08/16/19 16:18	08/17/19 10:08	JNJ	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

TP-4(1-2) L1128480-03 Solid

Collected by
Kyle Haggart

Collected date/time
08/02/19 14:10

Received date/time
08/03/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1326119	1	08/10/19 10:24	08/10/19 10:31	JAV	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1329669	1	08/16/19 16:18	08/17/19 10:29	JNJ	Mt. Juliet, TN

⁷ Gl

⁸ Al

⁹ Sc

ACCOUNT:

GeoDesign Inc. - Wilsonville, OR

PROJECT:

FAIRWAY-1-02

SDG:

L1128480

DATE/TIME:

08/21/19 18:02

PAGE:

3 of 16



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.5		1	08/10/2019 10:31	WG1326119

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Acenaphthene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Acenaphthylene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Benzo(a)anthracene	0.00679	J3	0.00649	1	08/17/2019 09:05	WG1329669
Benzo(a)pyrene	0.0116	J3	0.00649	1	08/17/2019 09:05	WG1329669
Benzo(b)fluoranthene	0.0130	J3	0.00649	1	08/17/2019 09:05	WG1329669
Benzo(g,h,i)perylene	0.0144	J3	0.00649	1	08/17/2019 09:05	WG1329669
Benzo(k)fluoranthene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Chrysene	0.00997	J3	0.00649	1	08/17/2019 09:05	WG1329669
Dibenz(a,h)anthracene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Fluoranthene	0.0195	J3 J5	0.00649	1	08/17/2019 09:05	WG1329669
Fluorene	ND		0.00649	1	08/17/2019 09:05	WG1329669
Indeno(1,2,3-cd)pyrene	0.00920	J3	0.00649	1	08/17/2019 09:05	WG1329669
Naphthalene	ND		0.0216	1	08/17/2019 09:05	WG1329669
Phenanthrene	0.00944	J3 J5	0.00649	1	08/17/2019 09:05	WG1329669
Pyrene	0.0229	J3 J5	0.00649	1	08/17/2019 09:05	WG1329669
1-Methylnaphthalene	ND		0.0216	1	08/17/2019 09:05	WG1329669
2-Methylnaphthalene	ND		0.0216	1	08/17/2019 09:05	WG1329669
2-Chloronaphthalene	ND		0.0216	1	08/17/2019 09:05	WG1329669
(S) Nitrobenzene-d5	61.4		14.0-149		08/17/2019 09:05	WG1329669
(S) 2-Fluorobiphenyl	70.3		34.0-125		08/17/2019 09:05	WG1329669
(S) p-Terphenyl-d14	75.8		23.0-120		08/17/2019 09:05	WG1329669

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Total Solids by Method 2540 G-2011

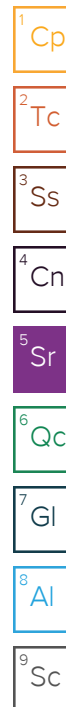
Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.8		1	08/10/2019 10:31	WG1326119

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
PCB 1016	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1221	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1232	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1242	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1248	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1254	ND		0.0181	1	08/19/2019 18:14	WG1330808
PCB 1260	ND		0.0181	1	08/19/2019 18:14	WG1330808
(S) Decachlorobiphenyl	106		10.0-135		08/19/2019 18:14	WG1330808
(S) Tetrachloro-m-xylene	293	J1	10.0-139		08/19/2019 18:14	WG1330808

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	ND		0.00640	1	08/17/2019 10:08	WG1329669
Acenaphthene	ND		0.00640	1	08/17/2019 10:08	WG1329669
Acenaphthylene	ND		0.00640	1	08/17/2019 10:08	WG1329669
Benzo(a)anthracene	0.0302		0.00640	1	08/17/2019 10:08	WG1329669
Benzo(a)pyrene	0.0501		0.00640	1	08/17/2019 10:08	WG1329669
Benzo(b)fluoranthene	0.0556		0.00640	1	08/17/2019 10:08	WG1329669
Benzo(g,h,i)perylene	0.0556		0.00640	1	08/17/2019 10:08	WG1329669
Benzo(k)fluoranthene	0.0141		0.00640	1	08/17/2019 10:08	WG1329669
Chrysene	0.0451		0.00640	1	08/17/2019 10:08	WG1329669
Dibenz(a,h)anthracene	0.00703		0.00640	1	08/17/2019 10:08	WG1329669
Fluoranthene	0.0726		0.00640	1	08/17/2019 10:08	WG1329669
Fluorene	ND		0.00640	1	08/17/2019 10:08	WG1329669
Indeno(1,2,3-cd)pyrene	0.0368		0.00640	1	08/17/2019 10:08	WG1329669
Naphthalene	ND		0.0213	1	08/17/2019 10:08	WG1329669
Phenanthrene	0.0260		0.00640	1	08/17/2019 10:08	WG1329669
Pyrene	0.0882		0.00640	1	08/17/2019 10:08	WG1329669
1-Methylnaphthalene	ND		0.0213	1	08/17/2019 10:08	WG1329669
2-Methylnaphthalene	ND		0.0213	1	08/17/2019 10:08	WG1329669
2-Chloronaphthalene	ND		0.0213	1	08/17/2019 10:08	WG1329669
(S) Nitrobenzene-d5	61.3		14.0-149		08/17/2019 10:08	WG1329669
(S) 2-Fluorobiphenyl	71.0		34.0-125		08/17/2019 10:08	WG1329669
(S) p-Terphenyl-d14	78.2		23.0-120		08/17/2019 10:08	WG1329669





Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.8		1	08/10/2019 10:31	WG1326119

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Anthracene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Acenaphthene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Acenaphthylene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Benzo(a)anthracene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Benzo(a)pyrene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Benzo(b)fluoranthene	0.00718		0.00640	1	08/17/2019 10:29	WG1329669
Benzo(g,h,i)perylene	0.00751		0.00640	1	08/17/2019 10:29	WG1329669
Benzo(k)fluoranthene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Chrysene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Dibenz(a,h)anthracene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Fluoranthene	0.00728		0.00640	1	08/17/2019 10:29	WG1329669
Fluorene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Indeno(1,2,3-cd)pyrene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Naphthalene	ND		0.0213	1	08/17/2019 10:29	WG1329669
Phenanthrene	ND		0.00640	1	08/17/2019 10:29	WG1329669
Pyrene	0.00913		0.00640	1	08/17/2019 10:29	WG1329669
1-Methylnaphthalene	ND		0.0213	1	08/17/2019 10:29	WG1329669
2-Methylnaphthalene	ND		0.0213	1	08/17/2019 10:29	WG1329669
2-Chloronaphthalene	ND		0.0213	1	08/17/2019 10:29	WG1329669
(S) Nitrobenzene-d5	50.3		14.0-149		08/17/2019 10:29	WG1329669
(S) 2-Fluorobiphenyl	63.0		34.0-125		08/17/2019 10:29	WG1329669
(S) p-Terphenyl-d14	73.2		23.0-120		08/17/2019 10:29	WG1329669

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3439505-1 08/10/19 10:31

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.000			

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1125235-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1125235-01 08/10/19 10:31 • (DUP) R3439505-3 08/10/19 10:31

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	71.6	74.9	1	4.50		10

Laboratory Control Sample (LCS)

(LCS) R3439505-2 08/10/19 10:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	



Method Blank (MB)

(MB) R3441906-1 08/19/19 14:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.00350	0.0170
PCB 1221	U		0.00537	0.0170
PCB 1232	U		0.00417	0.0170
PCB 1242	U		0.00318	0.0170
PCB 1248	U		0.00315	0.0170
PCB 1254	U		0.00472	0.0170
PCB 1260	U		0.00494	0.0170
(S) Decachlorobiphenyl	88.4			10.0-135
(S) Tetrachloro-m-xylene	70.9			10.0-139

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3441906-2 08/19/19 14:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
PCB 1260	0.167	0.0824	49.3	37.0-145	
PCB 1016	0.167	0.0791	47.4	36.0-141	
(S) Decachlorobiphenyl			79.0	10.0-135	
(S) Tetrachloro-m-xylene			60.8	10.0-139	

L1128710-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128710-04 08/19/19 15:05 • (MS) R3441906-3 08/19/19 15:21 • (MSD) R3441906-4 08/19/19 15:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	ND	0.104	0.0710	62.3	42.5	1	10.0-160			37.7	38
PCB 1016	0.167	ND	0.102	0.0707	61.1	42.3	1	10.0-160			36.2	37
(S) Decachlorobiphenyl					77.9	65.5		10.0-135				
(S) Tetrachloro-m-xylene					62.9	53.0		10.0-139				

Method Blank (MB)

(MB) R3441453-2 08/17/19 05:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	63.4			14.0-149
(S) 2-Fluorobiphenyl	70.7			34.0-125
(S) p-Terphenyl-d14	71.9			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3441638-1 08/18/19 12:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600

Method Blank (MB)

(MB) R3441638-1 08/18/19 12:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	58.5			14.0-149
(S) 2-Fluorobiphenyl	79.0			34.0-125
(S) p-Terphenyl-d14	79.1			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3441453-1 08/17/19 04:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0753	94.1	50.0-126	
Acenaphthene	0.0800	0.0744	93.0	50.0-120	
Acenaphthylene	0.0800	0.0782	97.8	50.0-120	
Benzo(a)anthracene	0.0800	0.0723	90.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0625	78.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0695	86.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0721	90.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0738	92.3	49.0-125	
Chrysene	0.0800	0.0725	90.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0741	92.6	47.0-125	
Fluoranthene	0.0800	0.0794	99.3	49.0-129	
Fluorene	0.0800	0.0788	98.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0739	92.4	46.0-125	
Naphthalene	0.0800	0.0706	88.3	50.0-120	
Phenanthrene	0.0800	0.0758	94.8	47.0-120	
Pyrene	0.0800	0.0694	86.8	43.0-123	
1-Methylnaphthalene	0.0800	0.0777	97.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0740	92.5	50.0-120	
2-Chloronaphthalene	0.0800	0.0733	91.6	50.0-120	
(S) Nitrobenzene-d5			95.4	14.0-149	
(S) 2-Fluorobiphenyl			98.3	34.0-125	
(S) p-Terphenyl-d14			98.3	23.0-120	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

L1128480-01,02,03

L1128480-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128480-01 08/17/19 09:05 • (MS) R3441453-3 08/17/19 09:26 • (MSD) R3441453-4 08/17/19 09:47

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0865	ND	0.0711	0.0611	80.7	69.2	1	10.0-145			15.1	30
Acenaphthene	0.0865	ND	0.0626	0.0576	72.4	66.6	1	14.0-127			8.27	27
Acenaphthylene	0.0865	ND	0.0660	0.0604	76.3	69.8	1	21.0-124			8.90	25
Benzo(a)anthracene	0.0865	0.00679	0.103	0.0688	111	71.7	1	10.0-139		J3	39.9	30
Benzo(a)pyrene	0.0865	0.0116	0.120	0.0732	125	71.3	1	10.0-141		J3	48.5	31
Benzo(b)fluoranthene	0.0865	0.0130	0.130	0.0718	135	68.0	1	10.0-140		J3	57.5	36
Benzo(g,h,i)perylene	0.0865	0.0144	0.132	0.0777	136	73.1	1	10.0-140		J3	51.8	33
Benzo(k)fluoranthene	0.0865	ND	0.0754	0.0627	82.6	68.0	1	10.0-137			18.3	31
Chrysene	0.0865	0.00997	0.111	0.0705	117	70.0	1	10.0-145		J3	44.9	30
Dibenz(a,h)anthracene	0.0865	ND	0.0684	0.0592	76.8	66.2	1	10.0-132			14.4	31
Fluoranthene	0.0865	0.0195	0.197	0.0955	205	87.9	1	10.0-153	J5	J3	69.3	33
Fluorene	0.0865	ND	0.0690	0.0609	79.8	70.4	1	11.0-130			12.5	29
Indeno(1,2,3-cd)pyrene	0.0865	0.00920	0.108	0.0699	114	70.1	1	10.0-137		J3	42.9	32
Naphthalene	0.0865	ND	0.0608	0.0548	70.3	63.4	1	10.0-135			10.3	27
Phenanthrene	0.0865	0.00944	0.165	0.0751	180	75.8	1	10.0-144	J5	J3	75.2	31
Pyrene	0.0865	0.0229	0.210	0.0957	216	84.1	1	10.0-148	J5	J3	74.7	35
1-Methylnaphthalene	0.0865	ND	0.0662	0.0608	76.5	70.3	1	10.0-142			8.52	28
2-Methylnaphthalene	0.0865	ND	0.0632	0.0580	73.0	67.0	1	10.0-137			8.57	28
2-Chloronaphthalene	0.0865	ND	0.0609	0.0566	70.4	65.4	1	29.0-120			7.37	24
(S) Nitrobenzene-d5					70.4	58.8		14.0-149				
(S) 2-Fluorobiphenyl					75.5	62.6		34.0-125				
(S) p-Terphenyl-d14					75.5	68.0		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 G

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

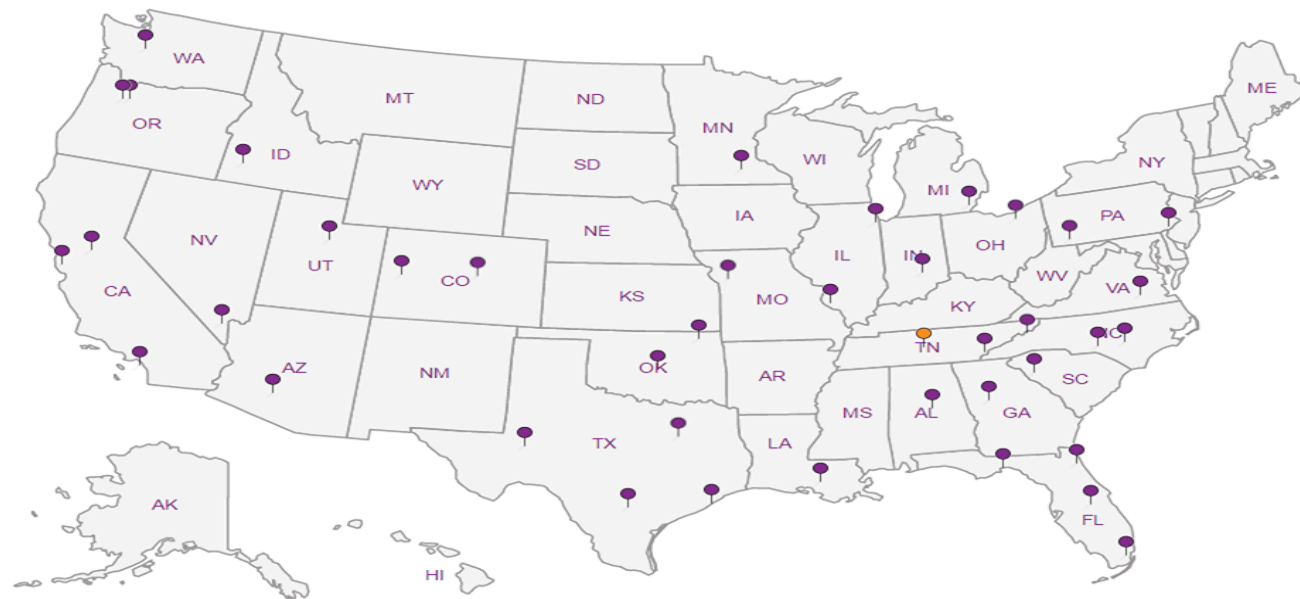
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.


¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

GeoDesign, Inc.
9450 SW Commerce Circle
Suite 300
Wilsonville, OR 97070

Billing Information:
GeoDesign, Inc.
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Report to:
Kyle Haggart

Email To:
khaggart@geodesigninc.com

Project
Description: Fairway-1-02

City/State
Collected: Wood Village, OR

Phone: 503-968-8787
Fax:

Client Project #
Fairway-1-02

Lab Project #

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice: N

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day

Date Results Needed

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	NWTPH-Gx	NWTPH-Dx	PAHs by EPA Method 8270D-SIM	VOCs by EPA Method 8260B	RCRA-8 Metals by EPA Method 6020	PCBs by EPA Method 8082	Pesticides by EPA Method 8081
TP-1 (6-1)		SS	KTH	1340	4:15							
TP-1 (6-1)		SS		1340	4:15							
TP-2 (0.5-1.5)		SS		1350	4:15							
TP-3 (0-1)		SS		1400	4:15							
TP-4 (1-2)		SS		1410	4:15							
		SS										
		SS										
		SS										
		SS										
		SS										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
UPS FedEx Courier

Tracking # 41882 862A 5750

Relinquished by: (Signature)

Date: 8.2.19

Time: 1510

Received by: (Signature)

Trip Blank Received: Yes/No
HCLY MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received
43.1-42.5 16

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 8/3/19 Time: 8:45

Sample Receipt Checklist
COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N
RAD SCREEN: <0.5 mR/h

If preservation required by Login: Date/Time

Hold:

Condition:
NCF ☒ OK



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# L1125225

1153

L1128480

Acctnum: GEODESPOR

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks

Sample # (lab only)

AV
8/14/19
01
02
03
04

Andy Vann

From: Brian Ford
Sent: Tuesday, August 13, 2019 1:59 PM
To: Project Service; Brian Ford; Sample Storage
Subject: L1125225 *GEODESPOR* re-log

Please re-log the following as R5 due 08/20. Transfer TS.

L1125225-01 (TP-1(0-1)): SV8270PAHSIMD, TS.
L1125225-03 (TP-3(0-1)): SV8270PAHSIMD, SV8082, TS.
L1125225-04 (TP-4(1-2)): SV8270PAHSIMD, TS.

Thanks,

Brian Ford

Project Manager

Pace Analytical National Center for Testing & Innovation

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ACRONYMS AND ABBREVIATIONS

MEMORANDUM

ACRONYMS AND ABBREVIATIONS

BGS	below ground surface
CFSL	clean fill screening level
DEQ	Oregon Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
I.D.	identification
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NE	not established
not detected	compound not detected at a concentration equal to or greater than the laboratory method reporting limit or reporting detection limit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
RBC	risk-based concentration
RBDM	<i>Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites</i>
RCRA	Resource Conservation and Recovery Act
TCE	trichloroethene
TMB	trimethylbenzene
VOC	volatile organic compound