

# **Underground Storage Tank Decommissioning Report**

**Tiller Ranger Station  
27812 Tiller Trail Highway  
Tiller, Oregon 97484  
LUST ID 10-17-1072**

**Prepared for:**

**Oregon Department of Environmental Quality**

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**November 13, 2017**

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Vortex Geo-Environmental Consulting, LLC (Vortex GEC), on behalf of Western States Environmental Services, Inc. (WSES), has prepared this report for the Oregon Department of Environmental Quality (DEQ) to present a summary of the underground storage tanks (USTs) decommissioning activities conducted at the Tiller Ranger Station property located at 27812 Tiller Trail Highway in Tiller, Oregon (the Subject Site) (see Figures 1 and 2). This report is intended to suffice DEQ's requirements and to ultimately obtain a no further action (NFA) letter from DEQ.

## **1 Subject Site Description and Background**

The Subject Site is located at 27812 Tiller Trail Highway in Tiller, Oregon. The Subject Site is currently owned and occupied by the United States Forest Service (USFS) Tiller Ranger Station and used as commercial/occupational space.

Two underground storage tanks were present at the Subject Site in the vicinity and to the west-southwest of the flammable storage building.

The Subject Site's fueling station is identified as Facility # 3225 and included two USTs and three fuel dispensers. The USTs included one 2,500-gallon diesel tank (DEQ Permit BBFDB) and one 6,000-gallon unleaded gasoline tank (DEQ Permit BBFDA). The fuel dispensers were located adjacent and to the north of the USTs and included one diesel pump and two gasoline pumps (identified as the northern and southern gasoline pumps).

The sampling and decommissioning activities were documented by WSES with field notes and photographs. The photographs are included in Appendix A. The laboratory analytical results are included in Appendix B. The tank decommissioning documents prepared by WSES and the disposal receipts are included in Appendix C.

A summary of the analytical results of all soil samples collected at the Subject Site, including a comparison to the DEQ's generic applicable risk-based concentrations (RBCs) is provided in Table 1. The Subject Site location is depicted on Figure 1. The location of the former UST system and the soil sampling locations are depicted on Figure 2.

All soil samples obtained from the Subject Site were collected by WSES and placed immediately into specific laboratory supplied containers, individually labeled and recorded on a chain-of-custody, placed in an iced cooler, and submitted to Neilson Research Corporation (Neilson) laboratory in Medford, Oregon for various analyses, as described in the Sections 2 and 4.

## **2 Decommissioning Activities**

Two USTs, three fuel dispensers, and the associated fuel lines were decommissioned by removal on August 24, 2017. The decommissioning activities and soil sampling activities were conducted by WSES (Service Provider's License Number 10272) in accordance with

OAR 340-150. The soil sampling was conducted by Mr. Ralph E. Jenkins (Decommissioning Supervisor's License 10716).

The USTs were removed, cleaned, and properly transported to Douglas County Landfill in Roseburg, Oregon. The diesel UST was approximately 6 feet by 13.5 feet and the gasoline UST was approximately 8 feet by 20.5 feet, respectively. The bottom of the tanks was at approximately 8.6 feet below ground surface (bgs) (the diesel tank) and at approximately 11 feet bgs (the gasoline tank). The USTs were made of fiberglass. No holes, corrosion, and/or any damages were noticed in any USTs. No groundwater entered the excavation.

No apparent petroleum impacted soil was present below and around the USTs. Some minor petroleum contamination was reported in the collected soil samples below the sump of the diesel dispenser's pump and below the sump of the southern gasoline dispenser's pump. Ten soil confirmation samples were collected on August 24, 2017. Based on the laboratory results, it was concluded that residual petroleum contamination is present in the fuel dispensers area. A petroleum release was reported to DEQ on August 29, 2017 and LUST incident number 10-17-1072 was issued. Furthermore, based on the analytical results, approximately 1.5 cubic yard of soil was removed from the former dispensers area and additional soil samples were collected as confirmation samples from this area on September 14, 2017.

### 3 Confirmation Soil Sampling

Given the occupational use at the Subject Site, the following pathways of exposure and receptors were identified to apply or potentially apply at the Subject Site: soil *Ingestion, Dermal Contact, and Inhalation* exposure pathway for occupational, construction, and excavation workers use; soil *Volatilization to Outdoor Air* exposure pathway for occupational use; soil *Vapor Intrusion into Buildings* exposure pathway for occupational use; and soil *Leaching to Groundwater* exposure pathway for residential and occupational use.

Confirmation soil samples were collected on August 24 and September 14, 2017. The analytical results were compared to the DEQ's RBCs for the exposure pathway and receptors listed above.

#### 3.1 Soil Sampling August 24, 2017

Subsequent to the UST system removal, WSES collected ten confirmation soil samples on August 24, 2017. The confirmation samples were collected in the following locations:

- One sample below the end of each of the two USTs from a depth of approximately 10 feet bgs (below the diesel tank) and 12 feet bgs (below the gasoline tank); these soil samples were labeled as 17-071-G-N, 17-071-G-S, 17-071-D-N, and 17-071-D-S;
- One sample below each of the two gasoline dispensers from a depth of approximately 2.5 feet; these soil samples were labeled as 17-071-GN-Sump and 17-071-GS-Sump;

- Two samples below the diesel dispenser, one from a depth of approximately 2.5 feet and one from approximately 3.3 feet bgs; these soil samples were labeled as 17-071-D-Sump and 17-071-DCU; and
- Two samples below the fuel lines, which run for approximately 30 feet from the pumps to the tanks, from a depth of approximately 2 feet bgs; these soil samples were labeled as 17-071-L1 and 17-071-L2.

These ten confirmation samples were analyzed for the presence of total petroleum hydrocarbons (TPH) using Method HCID.

The analytical results reported the following:

- TPH in gasoline-range (TPH-g), diesel-range (TPH-d), and lube oil-range (TPH-o) were reported as "absent" in the soil samples collected below the USTs, below the fuel lines, and below the northern gasoline pump.
- TPH-g, TPH-d, and TPH-o were reported as "present" in the following soil samples:
  - TPH-g was reported present in the soil sample collected below the southern gasoline pump (17-071-GS-Sump);
  - TPH-d was reported present in the soil sample collected below the southern gasoline pump (17-071-GS-Sump) and the soil sample collected below the diesel pump (17-071-D-Sump); and
  - TPH-o was reported present in the soil samples collected below the diesel pump from the deeper interval (17-071-DCU).

The soil sample collected from below the southern gasoline pump (17-071-GS-Sump), in which TPH-g and TPH-d were reported as "present," was further analyzed for TPH-g using DEQ Method NWTPH-Gx and for TPH-g and TPH-o using DEQ Method NWTPH-Dx. The analytical results reported TPH-g, TPH-d, and TPH-o at concentrations above the laboratory method reporting limits (MRLs) but below the generic applicable RBCs.

The soil samples collected from below the diesel pump (17-071-D-Sump and 17-071-DCU), in which TPH-d and TPH-o were reported as "present," were further analyzed for TPH-g and TPH-o using DEQ Method NWTPH-Dx. The analytical results reported TPH-d and TPH-o in the shallower sample (17-071-D-Sump) and TPH-o in the deeper sample (17-071-DCU) at concentrations above the MRLs. The reported concentrations were below the generic applicable RBCs.

### 3.2 Soil Sampling September 14, 2017

Based on the reported analytical results, approximately 1.5 cubic yards of soil was removed from below the southern gasoline pump and the diesel pump and one additional confirmation soil sample was collected from each of these two areas from a depth of approximately 4 feet bgs. These two samples were labeled as 17-071-GS-Sump-2 and 17-071-D-Sump-2.

The soil sample collected from below the southern gasoline pump (17-071-GS-Sump-2) was analyzed for TPH-g using DEQ Method NWTPH-Gx; TPH-d and TPH-o using DEQ Method NWTPH-Dx; and volatile organic compounds (VOCs) using EPA Method 8260B. The analytical results reported TPH-d at a concentration above the MRL but below any generic applicable RBCs. TPH-g, TPH-o, and VPOCs were not reported at concentrations above the MRLs. Several VOCs' MRLs exceeded the occupational RBC for leaching to groundwater exposure pathway.

The soil sample collected from below the diesel pump (17-071-D-Sump-2) was analyzed for TPH-d and TPH-o using DEQ Method NWTPH-Dx; benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8260B; polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270C; and metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury) using EPA Method 6010B. The analytical results reported TPH-o, benzene, toluene, barium, chromium, lead, and mercury at a concentration above the MRL but below any generic applicable RBCs.

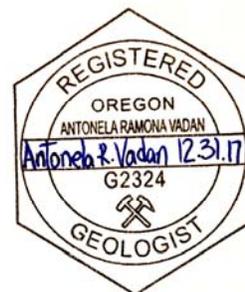
#### 4 Conclusion

Based on the field observations, soil removal activities, analytical data, and the current and future occupational use of the Subject Site, it was determined that the petroleum contamination remaining in the soil at the Subject Site do not pose an unacceptable risk to the human health and safety or to the environment. It is expected that the data presented in this report will be adequate for DEQ to grant an NFA determination for the LUST incident number 10-17-1072 pertaining to the property currently occupied by Tiller Ranger Station located at 27812 Tiller Trail Highway in Tiller, Oregon.

If there are any questions regarding this report please contact Mr. John Early with WSE at 541-770-2482 or Ms. Antonela Vadan with Vortex GEC at 541-200-9921.

Respectfully,

Vortex Geo-Environmental Consulting, LLC  
Antonela Vadan, R.G.



## **5 Limitations**

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

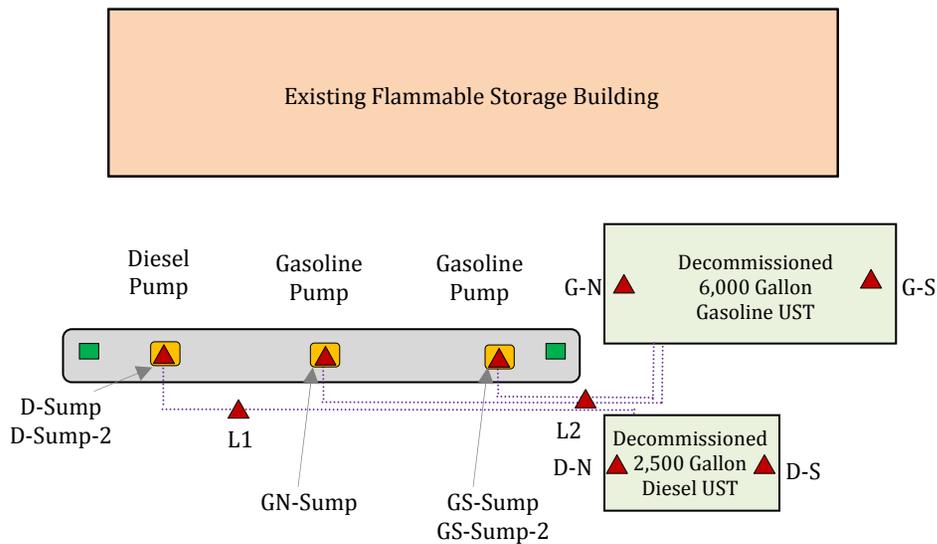
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## FIGURES

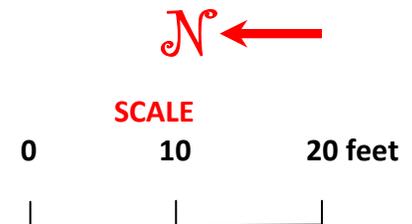


**FIGURE 1. Subject Site Location**

Tiller Ranger District  
27812 Tiller Trail Highway  
Tiller, Oregon 97484



▲ Soil Sampling Location  
 ■ Posts from the fuel dispenser's canopy



**FIGURE 2. Subject Site Map**  
 Tiller Ranger District  
 27812 Tiller Trail Highway  
 Tiller, Oregon 97484

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## TABLES

**TABLE 1. Summary of Soil Analytical Results - Tiller Ranger Station: 27812 Tiller Trail Highway, Tiller, Oregon 97484**

DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)				
Medium	SOIL							Sample ID	17-071-G-N	17-071-G-S	17-071-D-N	17-071-D-S
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	North end gasoline UST	South end gasoline UST	North end diesel UST	South end diesel UST
	Receptor Scenario	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	12.00	12.00	10.00
								Date	08/24/17	08/24/17	08/24/17	08/24/17
<b>Hydrocarbons Identification by DEQ Method NW-HCID (mg/kg)</b>												
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130	Absent	Absent	Absent	Absent	Absent
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	Absent	Absent	Absent	Absent	Absent
Oil-range	14,000	4,600	>Max	>Max	>Max	9500	>Max	Absent	Absent	Absent	Absent	Absent
<b>Total Petroleum Hydrocarbons by DEQ Method NWTPH-Gx and NWTPH-Dx (mg/kg)</b>												
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130	NA	NA	NA	NA	NA
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	NA	NA	NA	NA	NA
Oil-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	NA	NA	NA	NA	NA
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>												
Acetone	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Benzene	37	380	11,000	50	2.1	0.023	0.10	NA	NA	NA	NA	NA
Bromobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Bromochloromethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Bromodichloromethane	15	230	6,300	11	0.53	0.0020	0.0088	NA	NA	NA	NA	NA
Bromoform	260	2,700	74,000	360	110	0.046	0.22	NA	NA	NA	NA	NA
Bromomethane	750	370	10,000	700	17	0.083	0.40	NA	NA	NA	NA	NA
2-Butanone (MEK)	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
n-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
sec-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
tert-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
carbon disulfide	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Carbon tetrachloride	34	320	8,900	65	1.6	0.013	0.058	NA	NA	NA	NA	NA
Chlorobenzene	8,700	4,700	130,000	>Csat	>Csat	5.8	27	NA	NA	NA	NA	NA
Chloroethane	>Max	>Max	>Max	>Max	>Csat	310	1,300	NA	NA	NA	NA	NA
Chloroform	26	410	11,000	17	0.41	0.0034	0.015	NA	NA	NA	NA	NA
Chloromethane	25,000	25,000	700,000	>Csat	300	2.2	9.1	NA	NA	NA	NA	NA
2-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
4-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Chlorodibromomethane	17	210	5,800	14	2.9	0.0024	0.011	NA	NA	NA	NA	NA
1,2-dibromoethane (EDB)	0.73	9.0	250	0.65	0.16	0.00012	0.00056	NA	NA	NA	NA	NA
Dibromomethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	36,000	20,000	560,000	>Csat	>Csat	36	160	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	64	1,300	36,000	36	13	0.057	0.25	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,1-Dichloroethane	260	3,200	89,000	240	5.9	0.044	0.20	NA	NA	NA	NA	NA
1,2-dichloroethane (EDC)	16	200	5,600	15	1.0	0.0028	0.013	NA	NA	NA	NA	NA
1,1-Dichloroethene	29,000	13,000	370,000	>Csat	680	6.7	32	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	2,300	710	20,000	>Max	>Max	0.63	4.5	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	23,000	7,100	200,000	>Max	>Max	7.0	51	NA	NA	NA	NA	NA
1,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,3-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
2,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,1-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Ethylbenzene	150	1,700	49,000	150	49,000	0.22	0.90	NA	NA	NA	NA	NA
Hexachlorobutadiene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
2-Hexanone	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
iso-Propylbenzene (cumene)	57,000	27,000	750,000	>Csat	>Csat	96	>Csat	NA	NA	NA	NA	NA

**TABLE 1. Summary of Soil Analytical Results - Tiller Ranger Station: 27812 Tiller Trail Highway, Tiller, Oregon 97484**

DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)				
Medium	SOIL							Sample ID	17-071-G-N	17-071-G-S	17-071-D-N	17-071-D-S
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	North end gasoline UST	South end gasoline UST	North end diesel UST	South end diesel UST
	Receptor Scenario	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	Date	Date	Date
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>												
4-Isopropyltoluene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MiBK)	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
methyl t-butyl ether (MTBE)	1,100	12,000	320,000	1,500	110	0.11	0.54	NA	NA	NA	NA	NA
Methylene chloride	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34	NA	NA	NA	NA	NA
n-Propylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Styrene	130,000	56,000	>Max	>Csat	>Csat	170	800	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	1,000	10,000	280,000	>Csat	36	0.46	1.9	NA	NA	NA	NA	NA
Toluene	88,000	28,000	770,000	>Csat	>Csat	150	490	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	870,000	470,000	>Max	>Csat	>Csat	190	880	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	26	320	8,900	24	4.2	0.0063	0.029	NA	NA	NA	NA	NA
Trichloroethene (TCE)	51	470	13,000	96	2.3	0.013	0.087	NA	NA	NA	NA	NA
Trichlorofluoromethane	130,000	69,000	>Max	>Csat	>Csat	61	280	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	2,000	2,000	54,000	980	210	2.8	12	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	12,000	3,500	98,000	>Max	>Max	21	110	NA	NA	NA	NA	NA
Vinyl chloride	4.4	34	950	89	2.2	0.00057	0.010	NA	NA	NA	NA	NA
Xylenes	25,000	20,000	560,000	>Csat	>Csat	23	100	NA	NA	NA	NA	NA
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270C (mg/kg)</b>												
Acenaphthene	70,000	21,000	590,000	>Max	>Max	>Csat	>Csat	NA	NA	NA	NA	NA
Acenaphthylene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Anthracene	350,000	110,000	>Max	>Max	>Max	>Csat	>Csat	NA	NA	NA	NA	NA
Benz[a]anthracene	2.9	24	660	>Csat	>Csat	0.64	8.8	NA	NA	NA	NA	NA
Benzo[a]pyrene	0.29	2.4	67	NV	NV	0.60	>Csat	NA	NA	NA	NA	NA
Benzo[b]fluoranthene	2.9	24	670	NV	NV	6.2	>Csat	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Benzo[k]fluoranthene	29	240	6,700	NV	NV	>Csat	>Csat	NA	NA	NA	NA	NA
Chrysene	290	2,400	67,000	NV	NV	>Csat	>Csat	NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	0.29	2.4	67	NV	NV	2.0	>Csat	NA	NA	NA	NA	NA
Fluoranthene	30,000	10,000	280,000	NV	NV	>Csat	>Csat	NA	NA	NA	NA	NA
Fluorene	47,000	14,000	390,000	>Max	>Max	>Csat	>Csat	NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	2.9	24	670	NV	NV	>Csat	>Csat	NA	NA	NA	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34	NA	NA	NA	NA	NA
Phenanthrene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Pvrene	23,000	7,500	210,000	>Max	>Max	>Csat	>Csat	NA	NA	NA	NA	NA
<b>Total Metals by EPA 6010B (mg/kg)</b>												
Arsenic	1.9	15	420	NV	NV	*	*	NA	NA	NA	NA	NA
Barium	220,000	69,000	>Max	NV	NV	*	*	NA	NA	NA	NA	NA
Cadmium	1,100	350	9,700	NV	NV	*	*	NA	NA	NA	NA	NA
Chromium	>Max	530,000	>Max	NV	NV	*	*	NA	NA	NA	NA	NA
Lead	800	800	800	NV	NV	30	30	NA	NA	NA	NA	NA
Selenium	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	NA	NA
Silver	5,800	1,800	49,000	NV	NV	*	*	NA	NA	NA	NA	NA
Mercury	350	110	2,900	NV	NV	*	*	NA	NA	NA	NA	NA

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DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)					
Medium	SOIL							Sample ID	17-071-GN-Sump	17-071-GS-Sump	17-071-GS-Sump-2	17-071-D-Sump	17-071-DCU
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	North gasoline pump's sump	South gasoline pump's sump	South gasoline pump's sump	South diesel pump's sump	South diesel pump's sump
	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	2.50	2.50	4.00	2.50	3.30
Receptor Scenario								Date	08/24/17	08/24/17	9/14/2017	08/24/17	08/24/17
<b>Hydrocarbons Identification by DEQ Method NW-HCID (mg/kg)</b>													
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130		Absent	<b>Present</b>	NA	Absent	Absent
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max		Absent	<b>Present</b>	NA	<b>Present</b>	Absent
Oil-range	14,000	4,600	>Max	>Max	>Max	9500	>Max		Absent	Absent	NA	Absent	<b>Present, X3</b>
<b>Total Petroleum Hydrocarbons by DEQ Method NWTPH-Gx and NWTPH-Dx (mg/kg)</b>													
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130		NA	<b>15.4, G2</b>	<3.82, MI	NA	NA
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max		NA	<b>619</b>	<b>33.5</b>	<b>940</b>	<64.8, ML
Oil-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max		NA	<b>35</b>	<29.2	<b>45.1</b>	<b>1,350, X3</b>
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>													
Acetone	NE	NE	NE	NE	NE	NE	NE		NA	NA	<1.76	NA	NA
Benzene	37	380	11,000	50	2.1	0.023	0.10		NA	NA	< <b>0.0308</b>	NA	NA
Bromobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
Bromochloromethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
Bromodichloromethane	15	230	6,300	11	0.53	0.0020	0.0088		NA	NA	< <b>0.0441</b>	NA	NA
Bromoform	260	2,700	74,000	360	110	0.046	0.22		NA	NA	< <b>0.0441</b>	NA	NA
Bromomethane	750	370	10,000	700	17	0.083	0.40		NA	NA	< <b>0.441</b>	NA	NA
2-Butanone (MEK)	NE	NE	NE	NE	NE	NE	NE		NA	NA	<1.76	NA	NA
n-Butylbenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
sec-Butylbenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
tert-Butylbenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
carbon disulfide	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.11	NA	NA
Carbon tetrachloride	34	320	8,900	65	1.6	0.013	0.058		NA	NA	< <b>0.0441</b>	NA	NA
Chlorobenzene	8,700	4,700	130,000	>Csat	>Csat	5.8	27		NA	NA	<0.0441	NA	NA
Chloroethane	>Max	>Max	>Max	>Max	>Csat	310	1,300		NA	NA	<0.176	NA	NA
Chloroform	26	410	11,000	17	0.41	0.0034	0.015		NA	NA	< <b>0.0441</b>	NA	NA
Chloromethane	25,000	25,000	700,000	>Csat	300	2.2	9.1		NA	NA	<0.0441	NA	NA
2-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
4-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
1,2-Dibromo-3-chloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.881	NA	NA
Chlorodibromomethane	17	210	5,800	14	2.9	0.0024	0.011		NA	NA	< <b>0.0441</b>	NA	NA
1,2-dibromoethane (EDB)	0.73	9.0	250	0.65	0.16	0.00012	0.00056		NA	NA	< <b>0.0441</b>	NA	NA
Dibromomethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	< <b>0.0441</b>	NA	NA
1,2-Dichlorobenzene	36,000	20,000	560,000	>Csat	>Csat	36	160		NA	NA	< <b>0.0441</b>	NA	NA
1,3-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	< <b>0.0441</b>	NA	NA
1,4-Dichlorobenzene	64	1,300	36,000	36	13	0.057	0.25		NA	NA	<0.0441	NA	NA
Dichlorodifluoromethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.176	NA	NA
1,1-Dichloroethane	260	3,200	89,000	240	5.9	0.044	0.20		NA	NA	< <b>0.0441</b>	NA	NA
1,2-dichloroethane (EDC)	16	200	5,600	15	1.0	0.0028	0.013		NA	NA	< <b>0.0441</b>	NA	NA
1,1-Dichloroethene	29,000	13,000	370,000	>Csat	680	6.7	32		NA	NA	<0.0441	NA	NA
cis-1,2-Dichloroethene	2,300	710	20,000	>Max	>Max	0.63	4.5		NA	NA	<0.0441	NA	NA
trans-1,2-Dichloroethene	23,000	7,100	200,000	>Max	>Max	7.0	51		NA	NA	<0.0441	NA	NA
1,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
1,3-Dichloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
2,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
1,1-Dichloropropene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
cis-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
trans-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
Ethylbenzene	150	1,700	49,000	150	49,000	0.22	0.90		NA	NA	<0.0441	NA	NA
Hexachlorobutadiene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.441	NA	NA
2-Hexanone	NE	NE	NE	NE	NE	NE	NE		NA	NA	<1.76	NA	NA
iso-Propylbenzene (cumene)	57,000	27,000	750,000	>Csat	>Csat	96	>Csat		NA	NA	<0.0441	NA	NA

**TABLE 1. Summary of Soil Analytical Results - Tiller Ranger Station: 27812 Tiller Trail Highway, Tiller, Oregon 97484**

DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)					
Medium	SOIL							Sample ID	17-071-GN-Sump	17-071-GS-Sump	17-071-GS-Sump-2	17-071-D-Sump	17-071-DCU
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	North gasoline pump's sump	South gasoline pump's sump	South gasoline pump's sump	South diesel pump's sump	South diesel pump's sump
	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	2.50	2.50	4.00	2.50	3.30
Receptor Scenario								Date	08/24/17	08/24/17	9/14/2017	08/24/17	08/24/17
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>													
4-Isopropyltoluene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
4-Methyl-2-pentanone (MIBK)	NE	NE	NE	NE	NE	NE	NE		NA	NA	<1.76	NA	NA
methyl t-butyl ether (MTBE)	1,100	12,000	320,000	1,500	110	0.11	0.54		NA	NA	<0.0441	NA	NA
Methylene chloride	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.176	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34		NA	NA	<0.0441	NA	NA
n-Propylbenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
Styrene	130,000	56,000	>Max	>Csat	>Csat	170	800		NA	NA	<0.0441	NA	NA
1,1,1,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
1,1,2,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0441	NA	NA
Tetrachloroethene (PCE)	1,000	10,000	280,000	>Csat	36	0.46	1.9		NA	NA	<0.0441	NA	NA
Toluene	88,000	28,000	770,000	>Csat	>Csat	150	490		NA	NA	<0.0881	NA	NA
1,2,3-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0881	NA	NA
1,2,4-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.0881	NA	NA
1,1,1-Trichloroethane	870,000	470,000	>Max	>Csat	>Csat	190	880		NA	NA	<0.0441	NA	NA
1,1,2-Trichloroethane	26	320	8,900	24	4.2	0.0063	0.029		NA	NA	<0.0441	NA	NA
Trichloroethene (TCE)	51	470	13,000	96	2.3	0.013	0.087		NA	NA	<0.0441	NA	NA
Trichlorofluoromethane	130,000	69,000	>Max	>Csat	>Csat	61	280		NA	NA	<0.0441	NA	NA
1,2,3-Trichloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	<0.881	NA	NA
1,2,4-Trimethylbenzene	2,000	2,000	54,000	980	210	2.8	12		NA	NA	<0.0441	NA	NA
1,3,5-Trimethylbenzene	12,000	3,500	98,000	>Max	>Max	21	110		NA	NA	<0.0441	NA	NA
Vinyl chloride	4.4	34	950	89	2.2	0.00057	0.010		NA	NA	<0.0441	NA	NA
Xylenes	25,000	20,000	560,000	>Csat	>Csat	23	100		NA	NA	<0.132	NA	NA
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270C (mg/kg)</b>													
Acenaphthene	70,000	21,000	590,000	>Max	>Max	>Csat	>Csat		NA	NA	NA	NA	NA
Acenaphthylene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA	NA	NA
Anthracene	350,000	110,000	>Max	>Max	>Max	>Csat	>Csat		NA	NA	NA	NA	NA
Benz[a]anthracene	2.9	24	660	>Csat	>Csat	0.64	8.8		NA	NA	NA	NA	NA
Benzo[a]pyrene	0.29	2.4	67	NV	NV	0.60	>Csat		NA	NA	NA	NA	NA
Benzo[b]fluoranthene	2.9	24	670	NV	NV	6.2	>Csat		NA	NA	NA	NA	NA
Benzo[g,h,i]perylene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA	NA	NA
Benzo[k]fluoranthene	29	240	6,700	NV	NV	>Csat	>Csat		NA	NA	NA	NA	NA
Chrysene	290	2,400	67,000	NV	NV	>Csat	>Csat		NA	NA	NA	NA	NA
Dibenz[a,h]anthracene	0.29	2.4	67	NV	NV	2.0	>Csat		NA	NA	NA	NA	NA
Fluoranthene	30,000	10,000	280,000	NV	NV	>Csat	>Csat		NA	NA	NA	NA	NA
Fluorene	47,000	14,000	390,000	>Max	>Max	>Csat	>Csat		NA	NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	2.9	24	670	NV	NV	>Csat	>Csat		NA	NA	NA	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34		NA	NA	NA	NA	NA
Phenanthrene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA	NA	NA
Pyrene	23,000	7,500	210,000	>Max	>Max	>Csat	>Csat		NA	NA	NA	NA	NA
<b>Total Metals by EPA 6010B (mg/kg)</b>													
Arsenic	1.9	15	420	NV	NV	*	*		NA	NA	NA	NA	NA
Barium	220,000	69,000	>Max	NV	NV	*	*		NA	NA	NA	NA	NA
Cadmium	1,100	350	9,700	NV	NV	*	*		NA	NA	NA	NA	NA
Chromium	>Max	530,000	>Max	NV	NV	*	*		NA	NA	NA	NA	NA
Lead	800	800	800	NV	NV	30	30		NA	NA	NA	NA	NA
Selenium	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA	NA	NA
Silver	5,800	1,800	49,000	NV	NV	*	*		NA	NA	NA	NA	NA
Mercury	350	110	2,900	NV	NV	*	*		NA	NA	NA	NA	NA

**TABLE 1. Summary of Soil Analytical Results - Tiller Ranger Station: 27812 Tiller Trail Highway, Tiller, Oregon 97484**

DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)			
Medium	SOIL							Sample ID	17-071-D-Sump-2	17-071-L1	17-071-L2
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	South diesel pump's sump	North side fuel line	South side fuel line
	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	4.00	2.00	2.00
Receptor Scenario	OCC	CW	EW	OCC	OCC	RES	OCC	Date	9/14/2017	08/24/17	08/24/17
<b>Hydrocarbons Identification by DEQ Method NW-HCID (mg/kg)</b>											
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130	NA	Absent	Absent	
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	NA	Absent	Absent	
Oil-range	14,000	4,600	>Max	>Max	>Max	9500	>Max	NA	Absent	Absent	
<b>Total Petroleum Hydrocarbons by DEQ Method NWTPH-Gx and NWTPH-Dx (mg/kg)</b>											
Gasoline-range	20,000	9,700	>Max	69,000	>Max	31	130	NA	NA	NA	
Diesel-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	<14.4	NA	NA	
Oil-range	14,000	4,600	>Max	>Max	>Max	9,500	>Max	<b>1,340, X3</b>	NA	NA	
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>											
Acetone	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Benzene	37	380	11,000	50	2.1	0.023	0.10	0.0495	NA	NA	
Bromobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Bromochloromethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Bromodichloromethane	15	230	6,300	11	0.53	0.0020	0.0088	NA	NA	NA	
Bromoform	260	2,700	74,000	360	110	0.046	0.22	NA	NA	NA	
Bromomethane	750	370	10,000	700	17	0.083	0.40	NA	NA	NA	
2-Butanone (MEK)	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
n-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
sec-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
tert-Butylbenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
carbon disulfide	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Carbon tetrachloride	34	320	8,900	65	1.6	0.013	0.058	NA	NA	NA	
Chlorobenzene	8,700	4,700	130,000	>Csat	>Csat	5.8	27	NA	NA	NA	
Chloroethane	>Max	>Max	>Max	>Max	>Csat	310	1,300	NA	NA	NA	
Chloroform	26	410	11,000	17	0.41	0.0034	0.015	NA	NA	NA	
Chloromethane	25,000	25,000	700,000	>Csat	300	2.2	9.1	NA	NA	NA	
2-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
4-Chlorotoluene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,2-Dibromo-3-chloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Chlorodibromomethane	17	210	5,800	14	2.9	0.0024	0.011	NA	NA	NA	
1,2-dibromoethane (EDB)	0.73	9.0	250	0.65	0.16	0.00012	0.00056	NA	NA	NA	
Dibromomethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,2-Dichlorobenzene	36,000	20,000	560,000	>Csat	>Csat	36	160	NA	NA	NA	
1,3-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,4-Dichlorobenzene	64	1,300	36,000	36	13	0.057	0.25	NA	NA	NA	
Dichlorodifluoromethane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,1-Dichloroethane	260	3,200	89,000	240	5.9	0.044	0.20	NA	NA	NA	
1,2-dichloroethane (EDC)	16	200	5,600	15	1.0	0.0028	0.013	NA	NA	NA	
1,1-Dichloroethene	29,000	13,000	370,000	>Csat	680	6.7	32	NA	NA	NA	
cis-1,2-Dichloroethene	2,300	710	20,000	>Max	>Max	0.63	4.5	NA	NA	NA	
trans-1,2-Dichloroethene	23,000	7,100	200,000	>Max	>Max	7.0	51	NA	NA	NA	
1,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,3-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
2,2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
1,1-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
cis-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
trans-1,3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
Ethylbenzene	150	1,700	49,000	150	49,000	0.22	0.90	<0.0381	NA	NA	
Hexachlorobutadiene	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
2-Hexanone	NE	NE	NE	NE	NE	NE	NE	NA	NA	NA	
iso-Propylbenzene (cumene)	57,000	27,000	750,000	>Csat	>Csat	96	>Csat	NA	NA	NA	

**TABLE 1. Summary of Soil Analytical Results - Tiller Ranger Station: 27812 Tiller Trail Highway, Tiller, Oregon 97484**

DEQ Risk-Based Concentrations for Soil (mg/kg) (1)								Soil Samples (2), (3)			
Medium	SOIL							Sample ID	17-071-D-Sump-2	17-071-L1	17-071-L2
Exposure Pathway	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Vapor Intrusion into Buildings	Leaching to Groundwater		Location	South diesel pump's sump	North side fuel line	South side fuel line
	OCC	CW	EW	OCC	OCC	RES	OCC	Depth (ft bgs)	4.00	2.00	2.00
Receptor Scenario	OCC	CW	EW	OCC	OCC	RES	OCC	Date	9/14/2017	08/24/17	08/24/17
<b>Volatile Organic Compounds by EPA Method 8260B (mg/kg)</b>											
4-Isopropyltoluene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
4-Methyl-2-pentanone (MiBK)	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
methyl t-butyl ether (MTBE)	1,100	12,000	320,000	1,500	110	0.11	0.54		NA	NA	NA
Methylene chloride	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34		NA	NA	NA
n-Propylbenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
Styrene	130,000	56,000	>Max	>Csat	>Csat	170	800		NA	NA	NA
1,1,1,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
1,1,2,2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
Tetrachloroethene (PCE)	1,000	10,000	280,000	>Csat	36	0.46	1.9		NA	NA	NA
Toluene	88,000	28,000	770,000	>Csat	>Csat	150	490		<b>0.193</b>	NA	NA
1,2,3-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
1,2,4-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
1,1,1-Trichloroethane	870,000	470,000	>Max	>Csat	>Csat	190	880		NA	NA	NA
1,1,2-Trichloroethane	26	320	8,900	24	4.2	0.0063	0.029		NA	NA	NA
Trichloroethene (TCE)	51	470	13,000	96	2.3	0.013	0.087		NA	NA	NA
Trichlorofluoromethane	130,000	69,000	>Max	>Csat	>Csat	61	280		NA	NA	NA
1,2,3-Trichloropropane	NE	NE	NE	NE	NE	NE	NE		NA	NA	NA
1,2,4-Trimethylbenzene	2,000	2,000	54,000	980	210	2.8	12		NA	NA	NA
1,3,5-Trimethylbenzene	12,000	3,500	98,000	>Max	>Max	21	110		NA	NA	NA
Vinyl chloride	4.4	34	950	89	2.2	0.00057	0.010		NA	NA	NA
Xylenes	25,000	20,000	560,000	>Csat	>Csat	23	100		<0.0761	NA	NA
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270C (mg/kg)</b>											
Acenaphthene	70,000	21,000	590,000	>Max	>Max	>Csat	>Csat		<0.0116	NA	NA
Acenaphthylene	NE	NE	NE	NE	NE	NE	NE		<0.0116	NA	NA
Anthracene	350,000	110,000	>Max	>Max	>Max	>Csat	>Csat		<0.0116, MI	NA	NA
Benz[a]anthracene	2.9	24	660	>Csat	>Csat	0.64	8.8		<0.0116	NA	NA
Benzo[a]pyrene	0.29	2.4	67	NV	NV	0.60	>Csat		<0.0116	NA	NA
Benzo[b]fluoranthene	2.9	24	670	NV	NV	6.2	>Csat		<0.0116	NA	NA
Benzo[g,h,i]perylene	NE	NE	NE	NE	NE	NE	NE		<0.0116	NA	NA
Benzo[k]fluoranthene	29	240	6,700	NV	NV	>Csat	>Csat		<0.0116	NA	NA
Chrysene	290	2,400	67,000	NV	NV	>Csat	>Csat		<0.0116	NA	NA
Dibenz[a,h]anthracene	0.29	2.4	67	NV	NV	2.0	>Csat		<0.0116	NA	NA
Fluoranthene	30,000	10,000	280,000	NV	NV	>Csat	>Csat		<0.0116	NA	NA
Fluorene	47,000	14,000	390,000	>Max	>Max	>Csat	>Csat		<0.0116	NA	NA
Indeno[1,2,3-cd]pyrene	2.9	24	670	NV	NV	>Csat	>Csat		<0.0116	NA	NA
Naphthalene	23	580	16,000	83	83	0.077	0.34		<0.0116	NA	NA
Phenanthrene	NE	NE	NE	NE	NE	NE	NE		<0.0116	NA	NA
Pvrene	23,000	7,500	210,000	>Max	>Max	>Csat	>Csat		<0.0116	NA	NA
<b>Total Metals by EPA 6010B (mg/kg)</b>											
Arsenic	1.9	15	420	NV	NV	*	*		<6.1	NA	NA
Barium	220,000	69,000	>Max	NV	NV	*	*		<b>135</b>	NA	NA
Cadmium	1,100	350	9,700	NV	NV	*	*		<1.22	NA	NA
Chromium	>Max	530,000	>Max	NV	NV	*	*		<b>35.7</b>	NA	NA
Lead	800	800	800	NV	NV	30	30		<b>27.8</b>	NA	NA
Selenium	NE	NE	NE	NE	NE	NE	NE		<6.1	NA	NA
Silver	5,800	1,800	49,000	NV	NV	*	*		<0.122	NA	NA
Mercury	350	110	2,900	NV	NV	*	*		<b>0.0146</b>	NA	NA

---

## **APPENDIX A**

### **Site Photographs**



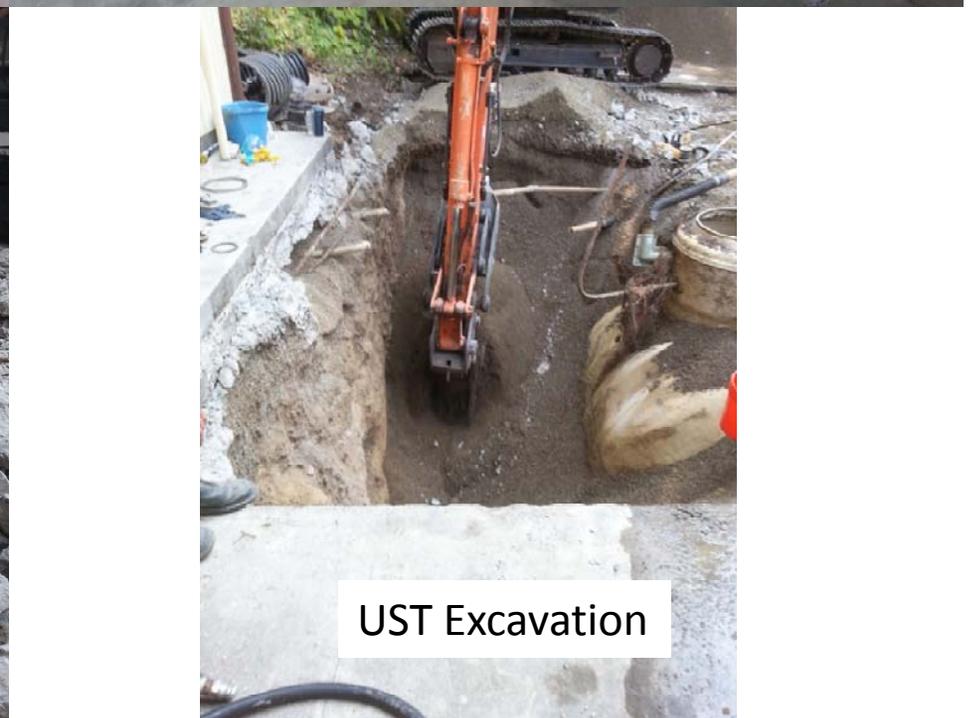
Site Picture



Dispenser Island



UST Area



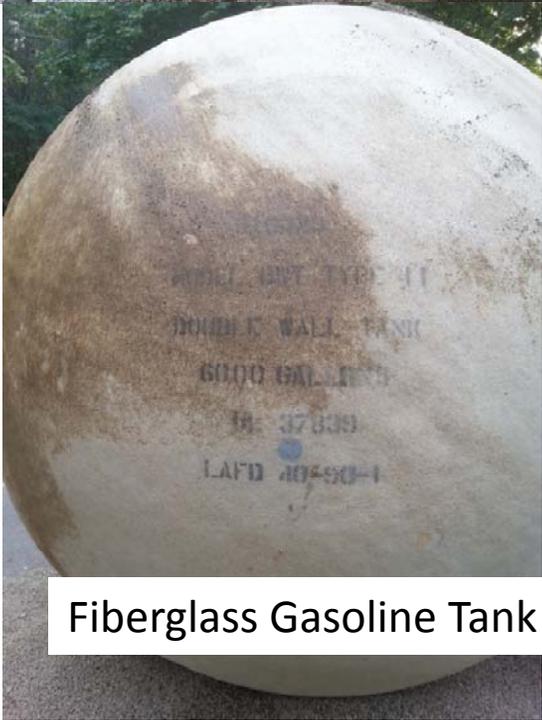
UST Excavation



Pit Excavation



Fiberglass Gasoline Tank



Fiberglass Gasoline Tank



Site Picture



UST Pit



Fiberglass Gasoline Tank





Fiberglass Gasoline Tank



Fiberglass Diesel Tank



Fiberglass Diesel Tank



Fiberglass Diesel Tank



Diesel Sump

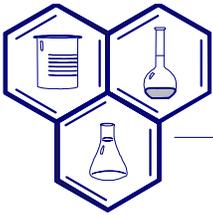


Gasoline Sump

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## **APPENDIX B**

### **Analytical Laboratory Reports**



# NEILSON RESEARCH CORPORATION

*Environmental Testing Laboratory*

8/31/2017

John Early  
Western States Environmental  
P.O. Box 787  
Medford, OR 97501  
TEL: (541) 770-2482  
FAX (541) 772-0293

RE: Tiller Ranger Station 17-071

Order No.: 1708B49

Dear John Early:

Neilson Research Corporation received 10 sample(s) on 8/25/2017 for the analyses presented in the following report.

The results relate only to the parameters tested or to the sample as received by the laboratory. This report shall not be reproduced except in full, without the written approval of Neilson Research Corporation. If you have any questions regarding these test results, please feel free to call.

Sincerely,  
Neilson Research Corporation

Tamra R. Schmedemann  
Project Manager

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**CLIENT:** Western States Environmental  
**Project:** Tiller Ranger Station 17-071  
**Lab Order:** 1708B49

**Date:** 31-Aug-17

## CASE NARRATIVE

The analyses were performed according to the guidelines in the Neilson Research Corporation Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Neilson Research Corporation certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-G-N**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-01**

Collection Date: **8/24/2017 7:30:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
TPH as Gasoline	A	ABSENT		21.8	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	ABSENT		54.5	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	ABSENT		109	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		107		0	%REC	1	8/28/2017
Surr: o-Terphenyl		98.8		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		13.4		0.1	wt%	1	8/28/2017

Analyst: **JMT**

Analyst: **MMA**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

1

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-G-S**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-02**

Collection Date: **8/24/2017 7:40:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
TPH as Gasoline	A	ABSENT		23.4	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	ABSENT		58.6	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	ABSENT		117	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		108		0	%REC	1	8/28/2017
Surr: o-Terphenyl		98.5		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		19.2		0.1	wt%	1	8/28/2017

Analyst: **JMT**

Analyst: **MMA**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-D-N**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-03**

Collection Date: **8/24/2017 7:50:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
TPH as Gasoline	A	ABSENT		23.9	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	ABSENT		59.8	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	ABSENT		120	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		107		0	%REC	1	8/28/2017
Surr: o-Terphenyl		98.3		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		21.0		0.1	wt%	1	8/28/2017

Analyst: **JMT**

Analyst: **MMA**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**Western States Environmental**

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-D-S**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-04**

Collection Date: **8/24/2017 8:10:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

### ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							<i>Analyst: JMT</i>
TPH as Gasoline	A	<b>ABSENT</b>		25.1	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	<b>ABSENT</b>		62.8	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	<b>ABSENT</b>		126	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		<b>113</b>		0	%REC	1	8/28/2017
Surr: o-Terphenyl		<b>104</b>		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							<i>Analyst: MMA</i>
Percent Moisture		<b>30.8</b>		0.1	wt%	1	8/28/2017

<p><b>Qualifiers:</b></p> <p>ND - Not Detected at the Reporting Limit</p> <p>J - Analyte detected below quantitation limits</p> <p>B - Analyte detected in the associated Method Blank</p> <p>* - Value exceeds Maximum Contaminant Level</p>	<p>S - Spike Recovery outside accepted recovery limits</p> <p>R - RPD outside accepted recovery limits</p> <p>E - Value above quantitation range</p> <p>MRL - Minimum Reporting Limit</p>
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# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-GNSump**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-05**

Collection Date: **8/24/2017 12:50:00 PM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
TPH as Gasoline	A	ABSENT		23.4	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	ABSENT		58.5	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	ABSENT		117	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		90.0		0	%REC	1	8/28/2017
Surr: o-Terphenyl		85.1		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		17.3		0.1	wt%	1	8/28/2017

Analyst: **JMT**

Analyst: **MMA**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**Western States Environmental**

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-Dsump**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-06**

Collection Date: **8/24/2017 12:45:00 PM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

### ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							<i>Analyst: JMT</i>
Lube Oil Range (C24 - C40)	A	<b>ABSENT</b>		98.8	mg/Kg-dry	1	8/28/2017
TPH as Gasoline	A	<b>ABSENT</b>		19.8	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	<b>PRESENT</b>		49.4	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		<b>101</b>		0	%REC	1	8/28/2017
Surr: o-Terphenyl		<b>102</b>		0	%REC	1	8/28/2017
<b>Northwest TPH Dx in Soil by NWTPH-DX</b>							<i>Analyst: JMT</i>
Diesel Range (C12 - C24)	A	<b>940</b>		13.4	mg/Kg-dry	1	8/28/2017
Lube Oil Range (C24 - C40)	A	<b>45.1</b>		26.7	mg/Kg-dry	1	8/28/2017
Surr: o-Terphenyl		<b>111</b>		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							<i>Analyst: MMA</i>
Percent Moisture		<b>10.3</b>		0.1	wt%	1	8/28/2017

<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit J - Analyte detected below quantitation limits B - Analyte detected in the associated Method Blank * - Value exceeds Maximum Contaminant Level	S - Spike Recovery outside accepted recovery limits R - RPD outside accepted recovery limits E - Value above quantitation range MRL - Minimum Reporting Limit
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# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**Western States Environmental**

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-L1**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-07**

Collection Date: **8/24/2017 9:30:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

### ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							<i>Analyst: JMT</i>
TPH as Gasoline	A	<b>ABSENT</b>		21.2	mg/Kg-dry	1	8/28/2017
TPH as Diesel	A	<b>ABSENT</b>		53	mg/Kg-dry	1	8/28/2017
TPH as Lube Oil	A	<b>ABSENT</b>		106	mg/Kg-dry	1	8/28/2017
Surr: 4-Bromofluorobenzene		<b>107</b>		0	%REC	1	8/28/2017
Surr: o-Terphenyl		<b>100</b>		0	%REC	1	8/28/2017
<b>Percent Moisture by D2216</b>							<i>Analyst: MMA</i>
Percent Moisture		<b>9.00</b>		0.1	wt%	1	8/28/2017

<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-L2**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-08**

Collection Date: **8/24/2017 9:45:00 AM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
TPH as Gasoline	A	ABSENT		26.6	mg/Kg-dry	1	8/29/2017
TPH as Diesel	A	ABSENT		66.5	mg/Kg-dry	1	8/29/2017
TPH as Lube Oil	A	ABSENT		133	mg/Kg-dry	1	8/29/2017
Surr: 4-Bromofluorobenzene		95.1		0	%REC	1	8/29/2017
Surr: o-Terphenyl		88.7		0	%REC	1	8/29/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		27.5		0.1	wt%	1	8/28/2017

Analyst: **JMT**

Analyst: **MMA**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-GSSump**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-09**

Collection Date: **8/24/2017 12:55:00 PM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							Analyst: <b>JMT</b>
TPH as Gasoline	A	<b>PRESENT</b>		24	mg/Kg-dry	1	8/29/2017
TPH as Diesel	A	<b>PRESENT</b>		59.9	mg/Kg-dry	1	8/29/2017
TPH as Lube Oil	A	<b>ABSENT</b>		120	mg/Kg-dry	1	8/29/2017
Surr: 4-Bromofluorobenzene		<b>136</b>		0	%REC	1	8/29/2017
Surr: o-Terphenyl		<b>131</b>		0	%REC	1	8/29/2017
<b>Northwest TPH Dx in Soil by NWTPH-DX</b>							Analyst: <b>JEL</b>
Diesel Range (C12 - C24)	A	<b>619</b>		16	mg/Kg-dry	1	8/30/2017
Lube Oil Range (C24 - C40)	A	<b>35.0</b>		32	mg/Kg-dry	1	8/30/2017
Surr: o-Terphenyl		<b>70.5</b>		0	%REC	1	8/30/2017
<b>Percent Moisture by D2216</b>							Analyst: <b>MMA</b>
Percent Moisture		<b>22.4</b>		0.1	wt%	1	8/28/2017
<b>Northwest TPH Gasoline in Soil by GC-FID by NWTPH-GX</b>							Analyst: <b>KCM</b>
TPH as Gasoline	A	<b>15.4</b>	G2	4.33	mg/Kg-dry	1	8/30/2017
Surr: 4-Bromofluorobenzene		<b>140</b>		0	%REC	1	8/30/2017



<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-DCU**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1708B49**

NRC Sample ID **1708B49-10**

Collection Date: **8/24/2017 2:15:00 PM**

Received Date: **8/25/2017 11:12:00 AM**

Reported Date: **8/31/2017 2:43:14 PM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution	
						Factor	Date Analyzed
<b>Northwest HCID in Soil by NW-HCID</b>							
Lube Oil Range (C24 - C40)	A	<b>PRESENT</b>	X3	110	mg/Kg-dry	1	8/29/2017
TPH as Gasoline	A	<b>ABSENT</b>		22	mg/Kg-dry	1	8/29/2017
TPH as Diesel	A	<b>ABSENT</b>		55	mg/Kg-dry	1	8/29/2017
Surr: 4-Bromofluorobenzene		<b>107</b>		0	%REC	1	8/29/2017
Surr: o-Terphenyl		<b>104</b>		0	%REC	1	8/29/2017
<b>Northwest TPH Dx in Soil by NWTPH-DX</b>							
TPH as Diesel	A	<b>ND</b>	MI ER	64.8	mg/Kg-dry	5	8/28/2017
Lube Oil Range (C24 - C40)	A	<b>1350</b>	X3	130	mg/Kg-dry	5	8/28/2017
Surr: o-Terphenyl		<b>119</b>		0	%REC	5	8/28/2017
<b>Percent Moisture by D2216</b>							
Percent Moisture		<b>10.7</b>		0.1	wt%	1	8/28/2017

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

**Neilson Research Corporation**  
DATA FLAGS

B	Analyte detected in the associated method blank.
BA	BOD Alternative Calculation: The initial results performed by Standard Methods did not fall within parameters of the Standard Methods calculation. An alternate approved calculation was performed using the HACH method and the value reported is an estimated concentration.
C	Sample(s) does not meet NELAP/ORELAP sample acceptance criteria. See Case Narrative.
C1	Sample(s) does not meet NELAP/ORELAP sample acceptance criteria for temperature.
CF	Results confirmed by re-analysis.
CU	Cleanup performed as specified by method.
D1	The diesel elution pattern for the sample is not typical.
D2	The sample appears to be a heavier hydrocarbon range than diesel.
D3	The sample appears to be a lighter hydrocarbon range than diesel.
D4	Detected hydrocarbons do not have pattern and range consistent with typical petroleum products and may be due to biogenic interference.
D5	Detected hydrocarbons in the diesel range appear to be weathered diesel.
E	Estimated value.
ER	Elevated reporting limit due to matrix. Report limits (MDLs, MRLs & PQLs) are adjusted based on variations in sample preparation amounts, analytical dilutions, and percent solids, where applicable.
FC	Fecal Coliforms: Sample(s) received past 40 CFR Part 136 specified holding time. Results reported as estimated values.
G1	The gasoline elution pattern for the sample is not typical.
G2	The sample appears to be a heavier hydrocarbon range than gasoline.
G3	The sample appears to be a lighter hydrocarbon range than gasoline.
G4	Detected hydrocarbons in the gasoline range appear to be weathered gasoline.
HP	Sample re-analysis performed outside of method specified holding time.
HR	Sample received outside of method specified holding time.
HS	Sample analyzed for volatile organics contained headspace.
HT	At the client's request, the sample was analyzed outside of method specified holding time.
H	Analysis performed outside of method specified holding time.
J	Analyte detected below the Minimum Reporting Limit (MRL) and above the Method Detection Limit (MDL). The J flag result is an estimated value and the user should be aware that this data is of limited reliability.
MI	Surrogate or Matrix Spike recovery is out of control limits due to matrix interference. Sample results may be biased.
N	See Case Narrative on page 2 of report.
Q	Closing continuing calibration verification (CCV) or laboratory control sample (LCS) exceeded high recovery limits, but associated samples are non-detect and the sample results are not affected. Data meets EPA/NELAP requirements.
R	Relative percent difference (RPD) is outside of the accepted recovery limits.
R1	Relative percent difference (RPD) is outside of the accepted recovery limits. However, analyses are not controlled on RPD values for sample concentrations that are less than the reporting limit.
R3	The relative percent difference (RPD) and/or percent recovery for the duplicate (DUP) or matrix spike (MS)/matrix spike duplicate (MSD) cannot be accurately calculated due to the concentration of analyte already present in the sample.
R4	Duplicate analysis failed due to result being at or near method reporting limit.
S	Surrogate and/or matrix spike recovery is outside of the accepted recovery limits. Sample results may be biased.
S1	Surrogate or matrix spike recovery is outside of control limits due to dilution necessary for analysis.
SC	Sub-contracted to another laboratory for analysis.
SP	Sample(s) were not collected per EPA Method 5035A protocols. The results are considered minimum values.
T	Toxicity Characteristic Leaching Procedure – Sample submitted contained < 0.5% solids. If the waste contains <0.5% dry solids, the liquid portion of the waste, after filtration, is defined as the TCLP extract.
#	Value exceeds regulatory level for TCLP contaminant.
X1	The motor oil elution pattern for the sample is not typical.
X2	The sample appears to be a heavier hydrocarbon range than motor oil.
X3	The sample appears to be a lighter hydrocarbon range than motor oil.
*	Value exceeds Maximum Contaminant Level or is outside the acceptable range.

NRC SOP QA-1104/AD-3100  
Revision 3  
Effective Date: 6/3/16

**CLIENT:** Western States Environmental  
**Work Order:** 1708B49  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: NWHCID\_S**

Sample ID <b>MB-39113</b>	SampType: <b>MBLK</b>	TestCode: <b>NWHCID_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97655</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39113</b>	TestNo: <b>NW-HCID</b>	<b>(EPA 3550B)</b>	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478268</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ABSENT	20.0									
TPH as Diesel	ABSENT	50.0									
TPH as Lube Oil	ABSENT	100									
Surr: 4-Bromofluorobenzene	41.93	0	40	0	105	50	150				
Surr: o-Terphenyl	19.15	0	20	0	95.8	50	150				

Sample ID <b>1708B49-01ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>NWHCID_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97655</b>						
Client ID: <b>17-071-G-N</b>	Batch ID: <b>39113</b>	TestNo: <b>NW-HCID</b>	<b>(EPA 3550B)</b>	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478270</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ABSENT	22.5						0	0	25	
TPH as Diesel	ABSENT	56.3						0	0	25	
TPH as Lube Oil	ABSENT	113						0	0	25	
Surr: 4-Bromofluorobenzene	48.14	0	45.07	0	107	50	150	0	0	0	
Surr: o-Terphenyl	22.06	0	22.54	0	97.9	50	150	0	0	0	

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1708B49  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode:** NWTPHDX\_S

Sample ID <b>MB-39111</b>	SampType: <b>MBLK</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97658</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39111</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478307</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	ND	12.5									
TPH as Lube Oil	ND	25.0									
Surr: o-Terphenyl	4.515	0	5	0	90.3	50	150				

Sample ID <b>MB-39130</b>	SampType: <b>MBLK</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97717</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39130</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479156</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	ND	12.5									
TPH as Lube Oil	ND	25.0									
Surr: o-Terphenyl	4.134	0	5	0	82.7	50	150				

Sample ID <b>LCS-39111</b>	SampType: <b>LCS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97658</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39111</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478308</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	235.7	12.5	250	5.253	92.2	50	150				
Surr: o-Terphenyl	4.774	0	5	0	95.5	50	150				

Sample ID <b>LCS-39130</b>	SampType: <b>LCS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97717</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39130</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479157</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	199.2	12.5	250	3.912	78.1	50	150				
Surr: o-Terphenyl	3.951	0	5	0	79.0	50	150				

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1708B49  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode:** NWTPHDX\_S

Sample ID	<b>1708B49-10AMS</b>	SampType: <b>MS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97658</b>					
Client ID:	<b>17-071-DCU</b>	Batch ID: <b>39111</b>	TestNo: <b>NWTPH-DX</b>	( <b>EPA 3550B</b> )	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478311</b>					
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	118.7	13.4	267.6	0	44.3	50	150				MI
Surr: o-Terphenyl	5.405	0	5.352	0	101	50	150				

Sample ID	<b>1708C28-03AMS</b>	SampType: <b>MS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97717</b>					
Client ID:	<b>ZZZZZ</b>	Batch ID: <b>39130</b>	TestNo: <b>NWTPH-DX</b>	( <b>EPA 3550B</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479164</b>					
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	220.2	14.1	281.2	0	78.3	50	150				
Surr: o-Terphenyl	4.192	0	5.623	0	74.5	50	150				

Sample ID	<b>1708B49-10AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/28/2017</b>	RunNo: <b>97658</b>					
Client ID:	<b>17-071-DCU</b>	Batch ID: <b>39111</b>	TestNo: <b>NWTPH-DX</b>	( <b>EPA 3550B</b> )	Analysis Date: <b>8/28/2017</b>	SeqNo: <b>1478312</b>					
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	114.4	13.3	266.9	0	42.9	50	150	118.7	3.68	25	MI
Surr: o-Terphenyl	5.362	0	5.338	0	100	50	150	0	0	0	

Sample ID	<b>1708C28-03AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97717</b>					
Client ID:	<b>ZZZZZ</b>	Batch ID: <b>39130</b>	TestNo: <b>NWTPH-DX</b>	( <b>EPA 3550B</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479165</b>					
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Diesel	224.8	14.0	280.1	0	80.3	50	150	220.2	2.07	25	
Surr: o-Terphenyl	4.386	0	5.602	0	78.3	50	150	0	0	0	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1708B49  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode:** NWTPHGX\_5035\_S

Sample ID <b>MB-39138</b>	SampType: <b>MBLK</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97716</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39138</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479141</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Gasoline	ND	2.50									
Surr: 4-Bromofluorobenzene	1.491	0	2	0	74.5	50	150				

Sample ID <b>LCS-39138</b>	SampType: <b>LCS</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97716</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39138</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479140</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Gasoline	29.56	2.50	25	0	118	70	130				
Surr: 4-Bromofluorobenzene	1.839	0	2	0	92.0	50	150				

Sample ID <b>1708C28-01BMS</b>	SampType: <b>MS</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97716</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39138</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479145</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Gasoline	822.1	14.2	141.5	677	103	70	130				
Surr: 4-Bromofluorobenzene	3.269	0	11.32	0	28.9	50	150				S1

Sample ID <b>1708C28-01BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>8/30/2017</b>	RunNo: <b>97716</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39138</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>8/30/2017</b>	SeqNo: <b>1479146</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Gasoline	816.9	14.2	141.5	677	98.9	70	130	822.1	0.638	25	
Surr: 4-Bromofluorobenzene	4.184	0	11.32	0	37.0	50	150	0	0	0	S1

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits



**Environmental Testing Laboratory**  
 245 South Grape Street \* Medford, OR 97501  
 (541) 770-5678 fax (541) 770-2901

# Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

**RUSH**

<b>Section A</b> Required Client Information	<b>Section B</b> Required Project Information	<b>Section C</b> Invoice Information	<b>Section D</b> Rush Status (Subject to Scheduling)
Company: Western States Environmental Services, Inc	Project Name: Tiller Ranger Station	Attention: Suzan	<input checked="" type="checkbox"/> Standard 10-14 Days
Address: PO Box 787	Project Number: 17-071	Company Name: WSES	<input type="checkbox"/> 5 Business Days (50% surcharge)
Medford, OR 97501	Report To: Jearly@wsenvironmental.com	Address: PO Box 787	<input type="checkbox"/> 3 Business Days (75% surcharge)
Email: jearly@wsenvironmental.com, searly@wsenvironmental.com	Copy To: searly@wsenvironmental.com	Medford, OR 97501	<input checked="" type="checkbox"/> 24-48 hours (100% surcharge) * only 17-071 D Sump
Phone: 541 770-2482 Fax: 541 772-0293		P.O. #	Other <u>17-071 D Sump</u>
Collected By (Print): Ralph Jenkins <i>Ralph Jenkins</i>			Authorized <input type="checkbox"/> Yes <input type="checkbox"/> No
Collected By (Sign):			
Email Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Mail Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Fax Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

**Section E**  
Sample Information

Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	Analysis Requested						Remarks/Field Data	NRC Sample # (Lab Use Only)	
						NW HClD	NW TPH-Gx	NW TPH-Dx	BTEX	PAHs				
17-071-G-N	Grab	S	8/24/17	0730	W	✓							Hold BTEX & PAHs as per 5035A	01
17-071-G-S	Grab	S		0740	W	✓							Hold BTEX & PAHs as per 5035A	02
17-071-D-N	Grab	S		0750	W	✓							Hold BTEX & PAHs as per 5035A	03
17-071-D-S	Grab	S		0810	W	✓							Hold BTEX & PAHs as per 5035A	04
17-071-G Sump GNSump	Grab	S		1250	4	✓							Hold BTEX & PAHs as per 5035A	05
<del>17-071-D Sump</del>	Grab	S		1245	4	✓							Hold BTEX & PAHs as per 5035A	06
17-071-L1	Grab	S		0930	4	✓							Hold BTEX & PAHs as per 5035A	07
17-071-L2	Grab	S		0945	4	✓							Hold BTEX & PAHs as per 5035A	08
17-071-G S Sump	Grab	S		1255	4	✓	✓	✓	✓	✓			Hold BTEX & PAHs as per 5035A	09
<del>17-071-D Sump</del>	GRAB	S		1415	3	✓		✓					Hold BTEX & PAHs as per 5035A	10

\*Matrix: DW - Drinking Water WW - Wastewater W - Water S - Soil/Solid SL - Sludge O - Oil WP - Wipe OT - Other

**Section F**

Relinquish/Receive	Sign	Print	Date	Time
Relinquished By: <i>Ralph Jenkins</i>		RALPH E. JENKINS	8/24/17	15:00
Received By: <i>John Eary</i>		John Eary	8/24/17	15:00
Relinquished By: <i>John Eary</i>		John Eary	8/25/17	11:12
Received By Laboratory: <i>Fred Bailey</i>		Fred Bailey	8/25/17	11:12

**Section G**

**Lab Use Only**

Temp: 4.9

4°C +/- 2°C:  Yes  No

Received on Ice:  Yes  No

Number of Bottles Received: 27

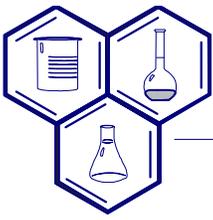
pH Checked: NA

COC Seals Intact:  Yes  No  NA

Field Blank Included:  Yes  No

Received Via  UPS  FedEX  Other  Hand

Payment:  Invoice  Cash  VISA, M/C  Check # \_\_\_\_\_ Amount \_\_\_\_\_



# NEILSON RESEARCH CORPORATION

*Environmental Testing Laboratory*

10/9/2017

John Early  
Western States Environmental  
P.O. Box 787  
Medford, OR 97501

TEL: (541) 770-2482  
FAX (541) 772-0293

RE: Tiller Ranger Station 17-071

Order No.: 1709514

Dear John Early:

Neilson Research Corporation received 2 sample(s) on 9/14/2017 for the analyses presented in the following report.

The results relate only to the parameters tested or to the sample as received by the laboratory. This report shall not be reproduced except in full, without the written approval of Neilson Research Corporation. If you have any questions regarding these test results, please feel free to call.

Sincerely,  
Neilson Research Corporation

Tamra R. Schmedemann  
Project Manager

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**CLIENT:** Western States Environmental  
**Project:** Tiller Ranger Station 17-071  
**Lab Order:** 1709514

**Date:** 09-Oct-17

## CASE NARRATIVE

The analyses were performed according to the guidelines in the Neilson Research Corporation Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Neilson Research Corporation certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: 17-071-DSump-2

Sample Location: Grab

Project: Tiller Ranger Station 17-071

Lab Order: 1709514

NRC Sample ID 1709514-01

Collection Date: 9/14/2017 10:00:00 AM

Received Date: 9/14/2017 12:38:00 PM

Reported Date: 10/9/2017 8:37:36 AM

Matrix: Solid

## ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest TPH Dx in Soil by NWTPH-DX</b>							Analyst: JEL
TPH as Diesel	A	ND		14.4	mg/Kg-dry	1	9/15/2017
Lube Oil Range (C24 - C40)	A	1340	X3	28.8	mg/Kg-dry	1	9/15/2017
Surr: o-Terphenyl		92.8		0	%REC	1	9/15/2017
<b>Percent Moisture by D2216</b>							Analyst: MMA
Percent Moisture		15.9		0.1	wt%	1	9/15/2017
<b>Trace Metals by EPA 7471A</b>							Analyst: JWC
Mercury	A	0.0146		0.00829	mg/Kg	1	10/5/2017
<b>Trace Metals by EPA 6010B</b>							Analyst: OML
Arsenic	A	ND		6.1	mg/Kg-dry	1	9/28/2017
Barium	A	135		6.1	mg/Kg-dry	1	9/28/2017
Cadmium	A	ND		1.22	mg/Kg-dry	1	9/28/2017
Chromium	A	35.7		6.1	mg/Kg-dry	1	9/28/2017
Lead	A	27.8		6.1	mg/Kg-dry	1	9/28/2017
Selenium	A	ND		6.1	mg/Kg-dry	1	9/28/2017
Silver	A	ND		0.122	mg/Kg-dry	1	9/28/2017
<b>PAHs by SIM by EPA 8270C</b>							Analyst: JEL
Acenaphthene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Acenaphthylene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Anthracene	A	ND	MI	0.0116	mg/Kg-dry	1	10/5/2017
Benzo(a)anthracene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Benzo(a)pyrene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Benzo(b)fluoranthene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Benzo(k)fluoranthene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Benzo(g,h,i)perylene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Chrysene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Dibenz(a,h)anthracene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Fluoranthene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Fluorene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Indeno(1,2,3-cd)pyrene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Naphthalene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Phenanthrene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017
Pyrene	A	ND		0.0116	mg/Kg-dry	1	10/5/2017

### Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

\* - Value exceeds Maximum Contaminant Level

MRL - Minimum Reporting Limit

1

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-DSump-2**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1709514**

NRC Sample ID **1709514-01**

Collection Date: **9/14/2017 10:00:00 AM**

Received Date: **9/14/2017 12:38:00 PM**

Reported Date: **10/9/2017 8:37:36 AM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>PAHs by SIM by EPA 8270C</b>							
Surr: 2-Fluorobiphenyl		<b>68.4</b>	MI	0	%REC	1	10/5/2017
Surr: 4-Terphenyl-d14		<b>58.6</b>	MI	0	%REC	1	10/5/2017
<b>BTEX/Naphthalene in Soil by EPA 8260</b>							
Benzene	A	<b>0.0495</b>		0.0266	mg/Kg-dry	1	9/29/2017
Ethylbenzene	A	<b>ND</b>		0.0381	mg/Kg-dry	1	9/29/2017
Toluene	A	<b>0.193</b>		0.0381	mg/Kg-dry	1	9/29/2017
Xylenes, Total	A	<b>ND</b>		0.0761	mg/Kg-dry	1	9/29/2017
Surr: 4-Bromofluorobenzene		<b>81.1</b>		0	%REC	1	9/29/2017
Surr: Dibromofluoromethane		<b>76.6</b>		0	%REC	1	9/29/2017
Surr: Toluene-d8		<b>89.4</b>		0	%REC	1	9/29/2017

Analyst: **JEL**

Analyst: **KCM**

### Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

**Western States Environmental**

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-GSSump-2**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1709514**

NRC Sample ID **1709514-02**

Collection Date: **9/14/2017 10:00:00 AM**

Received Date: **9/14/2017 12:38:00 PM**

Reported Date: **10/9/2017 8:37:36 AM**

Matrix: **Solid**

### ANALYTICAL RESULTS

Analyses	NELAP Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<b>Northwest TPH Dx in Soil by NWTPH-DX</b>							<i>Analyst: JEL</i>
Diesel Range (C12 - C24)	A	33.5		14.6	mg/Kg-dry	1	9/15/2017
TPH as Lube Oil	A	ND		29.2	mg/Kg-dry	1	9/15/2017
Surr: o-Terphenyl		83.9		0	%REC	1	9/15/2017
<b>Percent Moisture by D2216</b>							<i>Analyst: MMA</i>
Percent Moisture		17.2		0.1	wt%	1	9/15/2017
<b>Northwest TPH Gasoline in Soil by GC-FID by NWTPH-GX</b>							<i>Analyst: KCM</i>
TPH as Gasoline	A	ND	MI	3.82	mg/Kg-dry	1	9/15/2017
Surr: 4-Bromofluorobenzene		149		0	%REC	1	9/15/2017
<b>Volatile Organics by EPA 8260B</b>							<i>Analyst: KCM</i>
Acetone	A	ND		1.76	mg/Kg-dry	1	9/29/2017
Benzene	A	ND		0.0308	mg/Kg-dry	1	9/29/2017
Bromobenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Bromochloromethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Bromodichloromethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Bromoform	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Bromomethane		ND		0.441	mg/Kg-dry	1	9/29/2017
2-Butanone (MEK)	A	ND		1.76	mg/Kg-dry	1	9/29/2017
tert-Butylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
sec-Butylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
n-Butylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Carbon disulfide	A	ND		0.11	mg/Kg-dry	1	9/29/2017
Carbon tetrachloride	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Chlorobenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Chloroethane	A	ND		0.176	mg/Kg-dry	1	9/29/2017
Chloroform	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Chloromethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
2-Chlorotoluene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
4-Chlorotoluene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2-Dibromo-3-chloropropane	A	ND		0.881	mg/Kg-dry	1	9/29/2017
Dibromochloromethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2-Dibromoethane (EDB)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Dibromomethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2-Dichlorobenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017

<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit J - Analyte detected below quantitation limits B - Analyte detected in the associated Method Blank * - Value exceeds Maximum Contaminant Level	S - Spike Recovery outside accepted recovery limits R - RPD outside accepted recovery limits E - Value above quantitation range MRL - Minimum Reporting Limit
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# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-GSSump-2**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1709514**

NRC Sample ID **1709514-02**

Collection Date: **9/14/2017 10:00:00 AM**

Received Date: **9/14/2017 12:38:00 PM**

Reported Date: **10/9/2017 8:37:36 AM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Volatile Organics by EPA 8260B</b>							
							<i>Analyst: KCM</i>
1,3-Dichlorobenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,4-Dichlorobenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Dichlorodifluoromethane (Freon 12)	A	ND		0.176	mg/Kg-dry	1	9/29/2017
1,1-Dichloroethane (1,1-DCA)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2-Dichloroethane (EDC)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,1-Dichloroethene (1,1-DCE)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
cis-1,2-Dichloroethylene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
trans-1,2-Dichloroethylene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
2,2-Dichloropropane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2-Dichloropropane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,3-Dichloropropane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,1-Dichloropropene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
cis-1,3-Dichloropropene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
trans-1,3-Dichloropropene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Ethylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Hexachlorobutadiene	A	ND		0.441	mg/Kg-dry	1	9/29/2017
2-Hexanone	A	ND		1.76	mg/Kg-dry	1	9/29/2017
Isopropylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
4-Isopropyltoluene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
4-Methyl-2-pentanone (MIBK)	A	ND		1.76	mg/Kg-dry	1	9/29/2017
Methyl tert-butyl ether	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Methylene chloride	A	ND		0.176	mg/Kg-dry	1	9/29/2017
Naphthalene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
n-Propylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Styrene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,1,1,2-Tetrachloroethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,1,1,2,2-Tetrachloroethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Tetrachloroethene (PCE)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Toluene	A	ND		0.0881	mg/Kg-dry	1	9/29/2017
1,2,3-Trichlorobenzene	A	ND		0.0881	mg/Kg-dry	1	9/29/2017
1,2,4-Trichlorobenzene	A	ND		0.0881	mg/Kg-dry	1	9/29/2017
1,1,1-Trichloroethane (1,1,1-TCA)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,1,2-Trichloroethane	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Trichloroethene (TCE)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017

<b>Qualifiers:</b>	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	MRL - Minimum Reporting Limit

# Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

## Analysis Report

ORELAP 100016  
EPA OR00028

### Western States Environmental

P.O. Box 787

Medford, OR 97501

Client Sample ID: **17-071-GSSump-2**

Sample Location: **Grab**

Project: **Tiller Ranger Station 17-071**

Lab Order: **1709514**

NRC Sample ID **1709514-02**

Collection Date: **9/14/2017 10:00:00 AM**

Received Date: **9/14/2017 12:38:00 PM**

Reported Date: **10/9/2017 8:37:36 AM**

Matrix: **Solid**

## ANALYTICAL RESULTS

Analyses	NELAP		Qual	MRL	Units	Dilution	
	Accredited	Result				Factor	Date Analyzed
<b>Volatile Organics by EPA 8260B</b>							
<i>Analyst: KCM</i>							
Trichlorofluoromethane (Freon 11)	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,2,3-Trichloropropane	A	ND		0.881	mg/Kg-dry	1	9/29/2017
1,2,4-Trimethylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
1,3,5-Trimethylbenzene	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Vinyl chloride	A	ND		0.0441	mg/Kg-dry	1	9/29/2017
Xylenes, Total	A	ND		0.132	mg/Kg-dry	1	9/29/2017
Surr: Dibromofluoromethane		<b>76.9</b>		0	%REC	1	9/29/2017
Surr: Toluene-d8		<b>87.9</b>		0	%REC	1	9/29/2017
Surr: 4-Bromofluorobenzene		<b>80.6</b>		0	%REC	1	9/29/2017

### Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

\* - Value exceeds Maximum Contaminant Level

MRL - Minimum Reporting Limit

**Neilson Research Corporation**  
DATA FLAGS

B	Analyte detected in the associated method blank.
BA	BOD Alternative Calculation: The initial results performed by Standard Methods did not fall within parameters of the Standard Methods calculation. An alternate approved calculation was performed using the HACH method and the value reported is an estimated concentration.
C	Sample(s) does not meet NELAP/ORELAP sample acceptance criteria. See Case Narrative.
C1	Sample(s) does not meet NELAP/ORELAP sample acceptance criteria for temperature.
CF	Results confirmed by re-analysis.
CU	Cleanup performed as specified by method.
D1	The diesel elution pattern for the sample is not typical.
D2	The sample appears to be a heavier hydrocarbon range than diesel.
D3	The sample appears to be a lighter hydrocarbon range than diesel.
D4	Detected hydrocarbons do not have pattern and range consistent with typical petroleum products and may be due to biogenic interference.
D5	Detected hydrocarbons in the diesel range appear to be weathered diesel.
E	Estimated value.
ER	Elevated reporting limit due to matrix. Report limits (MDLs, MRLs & PQLs) are adjusted based on variations in sample preparation amounts, analytical dilutions, and percent solids, where applicable.
FC	Fecal Coliforms: Sample(s) received past 40 CFR Part 136 specified holding time. Results reported as estimated values.
G1	The gasoline elution pattern for the sample is not typical.
G2	The sample appears to be a heavier hydrocarbon range than gasoline.
G3	The sample appears to be a lighter hydrocarbon range than gasoline.
G4	Detected hydrocarbons in the gasoline range appear to be weathered gasoline.
HP	Sample re-analysis performed outside of method specified holding time.
HR	Sample received outside of method specified holding time.
HS	Sample analyzed for volatile organics contained headspace.
HT	At the client's request, the sample was analyzed outside of method specified holding time.
H	Analysis performed outside of method specified holding time.
J	Analyte detected below the Minimum Reporting Limit (MRL) and above the Method Detection Limit (MDL). The J flag result is an estimated value and the user should be aware that this data is of limited reliability.
MI	Surrogate or Matrix Spike recovery is out of control limits due to matrix interference. Sample results may be biased.
N	See Case Narrative on page 2 of report.
Q	Closing continuing calibration verification (CCV) or laboratory control sample (LCS) exceeded high recovery limits, but associated samples are non-detect and the sample results are not affected. Data meets EPA/NELAP requirements.
R	Relative percent difference (RPD) is outside of the accepted recovery limits.
R1	Relative percent difference (RPD) is outside of the accepted recovery limits. However, analyses are not controlled on RPD values for sample concentrations that are less than the reporting limit.
R3	The relative percent difference (RPD) and/or percent recovery for the duplicate (DUP) or matrix spike (MS)/matrix spike duplicate (MSD) cannot be accurately calculated due to the concentration of analyte already present in the sample.
R4	Duplicate analysis failed due to result being at or near method reporting limit.
S	Surrogate and/or matrix spike recovery is outside of the accepted recovery limits. Sample results may be biased.
S1	Surrogate or matrix spike recovery is outside of control limits due to dilution necessary for analysis.
SC	Sub-contracted to another laboratory for analysis.
SP	Sample(s) were not collected per EPA Method 5035A protocols. The results are considered minimum values.
T	Toxicity Characteristic Leaching Procedure – Sample submitted contained < 0.5% solids. If the waste contains <0.5% dry solids, the liquid portion of the waste, after filtration, is defined as the TCLP extract.
#	Value exceeds regulatory level for TCLP contaminant.
X1	The motor oil elution pattern for the sample is not typical.
X2	The sample appears to be a heavier hydrocarbon range than motor oil.
X3	The sample appears to be a lighter hydrocarbon range than motor oil.
*	Value exceeds Maximum Contaminant Level or is outside the acceptable range.

NRC SOP QA-1104/AD-3100  
Revision 3  
Effective Date: 6/3/16

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID <b>MB-39354</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA8260_503</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98426</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39354</b>	TestNo: <b>EPA 8260B (EPA 5035)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489472</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	ND	1.00									
Benzene	ND	0.0175									
Bromobenzene	ND	0.0250									
Bromochloromethane	ND	0.0250									
Bromodichloromethane	ND	0.0250									
Bromoform	ND	0.0250									
Bromomethane	ND	0.250									
2-Butanone (MEK)	ND	1.00									
tert-Butylbenzene	ND	0.0250									
sec-Butylbenzene	ND	0.0250									
n-Butylbenzene	ND	0.0250									
Carbon disulfide	ND	0.0625									
Carbon tetrachloride	ND	0.0250									
Chlorobenzene	ND	0.0250									
Chloroethane	ND	0.100									
Chloroform	ND	0.0250									
Chloromethane	ND	0.0250									
2-Chlorotoluene	ND	0.0250									
4-Chlorotoluene	ND	0.0250									
1,2-Dibromo-3-chloropropane	ND	0.500									
Dibromochloromethane	ND	0.0250									
1,2-Dibromoethane (EDB)	ND	0.0250									
Dibromomethane	ND	0.0250									
1,2-Dichlorobenzene	ND	0.0250									
1,3-Dichlorobenzene	ND	0.0250									
1,4-Dichlorobenzene	ND	0.0250									
Dichlorodifluoromethane (Freon 12)	ND	0.100									
1,1-Dichloroethane (1,1-DCA)	ND	0.0250									
1,2-Dichloroethane (EDC)	ND	0.0250									

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID <b>MB-39354</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA8260_503</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98426</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39354</b>	TestNo: <b>EPA 8260B (EPA 5035)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489472</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene (1,1-DCE)	ND	0.0250									
cis-1,2-Dichloroethylene	ND	0.0250									
trans-1,2-Dichloroethylene	ND	0.0250									
2,2-Dichloropropane	ND	0.0250									
1,2-Dichloropropane	ND	0.0250									
1,3-Dichloropropane	ND	0.0250									
1,1-Dichloropropene	ND	0.0250									
cis-1,3-Dichloropropene	ND	0.0250									
trans-1,3-Dichloropropene	ND	0.0250									
Ethylbenzene	ND	0.0250									
Hexachlorobutadiene	ND	0.250									
2-Hexanone	ND	1.00									
Isopropylbenzene	ND	0.0250									
4-Isopropyltoluene	ND	0.0250									
4-Methyl-2-pentanone (MIBK)	ND	1.00									
Methyl tert-butyl ether	ND	0.0250									
Methylene chloride	ND	0.100									
Naphthalene	ND	0.0250									
n-Propylbenzene	ND	0.0250									
Styrene	ND	0.0250									
1,1,1,2-Tetrachloroethane	ND	0.0250									
1,1,2,2-Tetrachloroethane	ND	0.0250									
Tetrachloroethene (PCE)	ND	0.0250									
Toluene	ND	0.0500									
1,2,3-Trichlorobenzene	ND	0.0500									
1,2,4-Trichlorobenzene	ND	0.0500									
1,1,1-Trichloroethane (1,1,1-TCA)	ND	0.0250									
1,1,2-Trichloroethane	ND	0.0250									
Trichloroethene (TCE)	ND	0.0250									

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID <b>MB-39354</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA8260_503</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98426</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39354</b>	TestNo: <b>EPA 8260B (EPA 5035)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489472</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane (Freon 11)	ND	0.0250									
1,2,3-Trichloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0250									
1,3,5-Trimethylbenzene	ND	0.0250									
Vinyl chloride	ND	0.0250									
m,p-Xylene	ND	0.0500									
o-Xylene	ND	0.0250									
Xylenes, Total	ND	0.0750									
Surr: Dibromofluoromethane	1.552	0	2	0	77.6	70	130				
Surr: Toluene-d8	1.764	0	2	0	88.2	70	130				
Surr: 4-Bromofluorobenzene	1.567	0	2	0	78.4	70	130				

Sample ID <b>LCS-39354</b>	SampType: <b>LCS</b>	TestCode: <b>EPA8260_503</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98426</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39354</b>	TestNo: <b>EPA 8260B (EPA 5035)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489473</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	1.899	1.00	2	0	95.0	70	130				
Benzene	1.046	0.0175	1	0	105	70	130				
Bromobenzene	1.051	0.0250	1	0	105	70	130				
Bromochloromethane	1.007	0.0250	1	0	101	70	130				
Bromodichloromethane	1.018	0.0250	1	0	102	70	130				
Bromoform	0.8840	0.0250	1	0	88.4	70	130				
Bromomethane	1.050	0.250	1	0	105	10	110				
2-Butanone (MEK)	1.944	1.00	2	0	97.2	70	130				
tert-Butylbenzene	1.116	0.0250	1	0	112	70	130				
sec-Butylbenzene	1.146	0.0250	1	0	115	70	130				
n-Butylbenzene	1.176	0.0250	1	0	118	70	130				
Carbon disulfide	1.085	0.0625	1	0	108	70	130				
Carbon tetrachloride	0.8885	0.0250	1	0	88.8	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
LCS-39354	LCS	EPA8260_503	mg/Kg	9/27/2017	98426						
Client ID: ZZZZZ	Batch ID: 39354	TestNo: EPA 8260B (EPA 5035)		Analysis Date: 9/28/2017	SeqNo: 1489473						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.054	0.0250	1	0	105	70	130				
Chloroethane	1.001	0.100	1	0	100	40	120				
Chloroform	1.026	0.0250	1	0	103	70	130				
Chloromethane	0.9710	0.0250	1	0	97.1	60	130				
2-Chlorotoluene	1.088	0.0250	1	0	109	70	130				
4-Chlorotoluene	1.085	0.0250	1	0	108	70	130				
1,2-Dibromo-3-chloropropane	0.8280	0.500	1	0	82.8	70	130				
Dibromochloromethane	0.8320	0.0250	1	0	83.2	70	130				
1,2-Dibromoethane (EDB)	1.042	0.0250	1	0	104	70	130				
Dibromomethane	1.016	0.0250	1	0	102	70	130				
1,2-Dichlorobenzene	1.054	0.0250	1	0	105	70	130				
1,3-Dichlorobenzene	1.053	0.0250	1	0	105	70	130				
1,4-Dichlorobenzene	1.046	0.0250	1	0	105	70	130				
Dichlorodifluoromethane (Freon 12)	0.9760	0.100	1	0	97.6	40	120				
1,1-Dichloroethane (1,1-DCA)	1.062	0.0250	1	0	106	70	130				
1,2-Dichloroethane (EDC)	1.016	0.0250	1	0	102	70	130				
1,1-Dichloroethene (1,1-DCE)	1.083	0.0250	1	0	108	70	130				
cis-1,2-Dichloroethylene	1.040	0.0250	1	0	104	70	130				
trans-1,2-Dichloroethylene	1.078	0.0250	1	0	108	70	130				
2,2-Dichloropropane	0.9740	0.0250	1	0	97.4	70	130				
1,2-Dichloropropane	1.062	0.0250	1	0	106	70	130				
1,3-Dichloropropane	1.018	0.0250	1	0	102	70	130				
1,1-Dichloropropene	1.112	0.0250	1	0	111	70	130				
cis-1,3-Dichloropropene	0.8520	0.0250	1	0	85.2	70	130				
trans-1,3-Dichloropropene	0.9045	0.0250	1	0	90.4	60	130				
Ethylbenzene	1.094	0.0250	1	0	109	70	130				
Hexachlorobutadiene	1.086	0.250	1	0	109	70	130				
2-Hexanone	1.946	1.00	2	0	97.3	70	130				
Isopropylbenzene	1.138	0.0250	1	0	114	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
LCS-39354	LCS	EPA8260_503	mg/Kg	9/27/2017	98426						
Client ID: ZZZZZ	Batch ID: 39354	TestNo: EPA 8260B (EPA 5035)		Analysis Date: 9/28/2017	SeqNo: 1489473						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4-Isopropyltoluene	1.149	0.0250	1	0	115	70	130				
4-Methyl-2-pentanone (MIBK)	2.008	1.00	2	0	100	70	130				
Methyl tert-butyl ether	1.046	0.0250	1	0	105	70	130				
Methylene chloride	0.9945	0.100	1	0	99.4	70	130				
Naphthalene	0.9105	0.0250	1	0	91.0	70	130				
n-Propylbenzene	1.132	0.0250	1	0	113	70	130				
Styrene	1.110	0.0250	1	0	111	70	130				
1,1,1,2-Tetrachloroethane	0.8515	0.0250	1	0	85.2	70	130				
1,1,2,2-Tetrachloroethane	1.006	0.0250	1	0	101	70	130				
Tetrachloroethene (PCE)	1.080	0.0250	1	0	108	70	130				
Toluene	1.013	0.0500	1	0	101	70	130				
1,2,3-Trichlorobenzene	1.052	0.0500	1	0	105	70	130				
1,2,4-Trichlorobenzene	1.063	0.0500	1	0	106	70	130				
1,1,1-Trichloroethane (1,1,1-TCA)	1.056	0.0250	1	0	106	70	130				
1,1,2-Trichloroethane	1.021	0.0250	1	0	102	70	130				
Trichloroethene (TCE)	1.092	0.0250	1	0	109	60	130				
Trichlorofluoromethane (Freon 11)	0.9950	0.0250	1	0	99.5	70	130				
1,2,3-Trichloropropane	0.9910	0.500	1	0	99.1	70	130				
1,2,4-Trimethylbenzene	1.114	0.0250	1	0	111	70	130				
1,3,5-Trimethylbenzene	1.126	0.0250	1	0	113	70	130				
Vinyl chloride	0.9955	0.0250	1	0	99.6	70	130				
m,p-Xylene	2.171	0.0500	2	0	109	70	130				
o-Xylene	1.079	0.0250	1	0	108	70	130				
Surr: Dibromofluoromethane	1.690	0	2	0	84.5	70	130				
Surr: Toluene-d8	1.794	0	2	0	89.7	70	130				
Surr: 4-Bromofluorobenzene	1.678	0	2	0	83.9	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	1709514-02BMS	SampType:	MS	TestCode:	EPA8260_503	Units:	mg/Kg-dry	Prep Date:	9/27/2017	RunNo:	98426
Client ID:	17-071-GSSump-2	Batch ID:	39354	TestNo:	EPA 8260B	(EPA 5035)		Analysis Date:	9/29/2017	SeqNo:	1489482
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	3.553	1.76	3.524	0	101	70	130				
Benzene	1.994	0.0308	1.762	0	113	70	130				
Bromobenzene	2.015	0.0441	1.762	0	114	70	130				
Bromochloromethane	1.892	0.0441	1.762	0	107	70	130				
Bromodichloromethane	1.663	0.0441	1.762	0	94.4	70	130				
Bromoform	1.239	0.0441	1.762	0	70.3	70	130				
Bromomethane	1.461	0.441	1.762	0	82.9	10	110				
2-Butanone (MEK)	3.621	1.76	3.524	0	103	70	130				
tert-Butylbenzene	2.099	0.0441	1.762	0	119	70	130				
sec-Butylbenzene	2.108	0.0441	1.762	0	120	70	130				
n-Butylbenzene	2.088	0.0441	1.762	0	118	70	130				
Carbon disulfide	1.984	0.110	1.762	0	113	70	130				
Carbon tetrachloride	1.254	0.0441	1.762	0	71.2	70	130				
Chlorobenzene	2.031	0.0441	1.762	0	115	70	130				
Chloroethane	1.777	0.176	1.762	0	101	40	120				
Chloroform	1.856	0.0441	1.762	0	105	70	130				
Chloromethane	1.820	0.0441	1.762	0	103	60	130				
2-Chlorotoluene	2.045	0.0441	1.762	0	116	70	130				
4-Chlorotoluene	2.040	0.0441	1.762	0	116	70	130				
1,2-Dibromoethane (EDB)	1.952	0.0441	1.762	0	111	70	130				
Dibromomethane	1.924	0.0441	1.762	0	109	70	130				
1,2-Dichlorobenzene	1.996	0.0441	1.762	0	113	70	130				
1,3-Dichlorobenzene	1.993	0.0441	1.762	0	113	70	130				
1,4-Dichlorobenzene	1.967	0.0441	1.762	0	112	70	130				
Dichlorodifluoromethane (Freon 12)	1.759	0.176	1.762	0	99.8	40	120				
1,1-Dichloroethane (1,1-DCA)	1.953	0.0441	1.762	0	111	70	130				
1,2-Dichloroethane (EDC)	1.953	0.0441	1.762	0	111	70	130				
1,1-Dichloroethene (1,1-DCE)	1.948	0.0441	1.762	0	111	70	130				
cis-1,2-Dichloroethylene	1.923	0.0441	1.762	0	109	70	130				

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	1709514-02BMS	SampType:	MS	TestCode:	EPA8260_503	Units:	mg/Kg-dry	Prep Date:	9/27/2017	RunNo:	98426
Client ID:	17-071-GSSump-2	Batch ID:	39354	TestNo:	EPA 8260B	(EPA 5035)		Analysis Date:	9/29/2017	SeqNo:	1489482
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,2-Dichloroethylene	1.996	0.0441	1.762	0	113	70	130				
1,2-Dichloropropane	2.060	0.0441	1.762	0	117	70	130				
1,3-Dichloropropane	1.966	0.0441	1.762	0	112	70	130				
1,1-Dichloropropene	2.096	0.0441	1.762	0	119	70	130				
cis-1,3-Dichloropropene	1.296	0.0441	1.762	0	73.6	70	130				
trans-1,3-Dichloropropene	1.439	0.0441	1.762	0	81.6	60	130				
Ethylbenzene	2.078	0.0441	1.762	0	118	70	130				
Hexachlorobutadiene	1.798	0.441	1.762	0	102	70	130				
2-Hexanone	3.928	1.76	3.524	0	111	70	130				
Isopropylbenzene	2.156	0.0441	1.762	0	122	70	130				
4-Isopropyltoluene	2.092	0.0441	1.762	0	119	70	130				
4-Methyl-2-pentanone (MIBK)	4.036	1.76	3.524	0	115	70	130				
Methyl tert-butyl ether	1.999	0.0441	1.762	0	113	70	130				
Methylene chloride	1.824	0.176	1.762	0	104	70	130				
Naphthalene	1.745	0.0441	1.762	0	99.0	70	130				
n-Propylbenzene	2.113	0.0441	1.762	0	120	70	130				
Styrene	2.128	0.0441	1.762	0	121	70	130				
1,1,1,2-Tetrachloroethane	1.298	0.0441	1.762	0	73.6	70	130				
1,1,2,2-Tetrachloroethane	1.869	0.0441	1.762	0	106	70	130				
Toluene	1.966	0.0881	1.762	0	112	70	130				
1,2,3-Trichlorobenzene	1.920	0.0881	1.762	0	109	70	130				
1,2,4-Trichlorobenzene	1.948	0.0881	1.762	0	111	70	130				
1,1,1-Trichloroethane (1,1,1-TCA)	1.715	0.0441	1.762	0	97.4	70	130				
1,1,2-Trichloroethane	1.979	0.0441	1.762	0	112	70	130				
Trichloroethene (TCE)	2.140	0.0441	1.762	0	121	60	130				
Trichlorofluoromethane (Freon 11)	1.787	0.0441	1.762	0	101	70	130				
1,2,3-Trichloropropane	1.927	0.881	1.762	0	109	70	130				
1,2,4-Trimethylbenzene	2.068	0.0441	1.762	0	117	70	130				
1,3,5-Trimethylbenzene	2.133	0.0441	1.762	0	121	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	<b>1709514-02BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA8260_503</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98426</b>
Client ID:	<b>17-071-GSSump-2</b>	Batch ID:	<b>39354</b>	TestNo:	<b>EPA 8260B</b>		<b>(EPA 5035)</b>	Analysis Date:	<b>9/29/2017</b>	SeqNo:	<b>1489482</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

m,p-Xylene	4.152	0.0881	3.524	0	118	70	130				
o-Xylene	2.112	0.0441	1.762	0.05815	117	70	130				
Surr: Dibromofluoromethane	2.702	0	3.524	0	76.7	70	130				
Surr: Toluene-d8	3.077	0	3.524	0	87.3	70	130				
Surr: 4-Bromofluorobenzene	2.889	0	3.524	0	82.0	70	130				

Sample ID	<b>1709514-02BMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA8260_503</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98494</b>
Client ID:	<b>17-071-GSSump-2</b>	Batch ID:	<b>39354</b>	TestNo:	<b>EPA 8260B</b>		<b>(EPA 5035)</b>	Analysis Date:	<b>10/3/2017</b>	SeqNo:	<b>1490416</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromo-3-chloropropane	1.418	0.881	1.762	0	80.5	70	130				
Dibromochloromethane	1.322	0.0441	1.762	0	75.0	70	130				
2,2-Dichloropropane	1.545	0.0441	1.762	0	87.7	70	130				
Tetrachloroethene (PCE)	2.025	0.0441	1.762	0	115	70	130				

Sample ID	<b>1709514-02BMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA8260_503</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98426</b>
Client ID:	<b>17-071-GSSump-2</b>	Batch ID:	<b>39354</b>	TestNo:	<b>EPA 8260B</b>		<b>(EPA 5035)</b>	Analysis Date:	<b>9/29/2017</b>	SeqNo:	<b>1489483</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acetone	3.800	1.76	3.524	0	108	70	130	3.553	6.71	25	
Benzene	1.974	0.0308	1.762	0	112	70	130	1.994	1.02	25	
Bromobenzene	2.026	0.0441	1.762	0	115	70	130	2.015	0.523	25	
Bromochloromethane	1.830	0.0441	1.762	0	104	70	130	1.892	3.36	25	
Bromodichloromethane	1.690	0.0441	1.762	0	95.9	70	130	1.663	1.58	25	
Bromoform	1.260	0.0441	1.762	0	71.5	70	130	1.239	1.69	25	
Bromomethane	1.374	0.441	1.762	0	78.0	10	110	1.461	6.15	25	
2-Butanone (MEK)	3.862	1.76	3.524	0	110	70	130	3.621	6.45	25	
tert-Butylbenzene	2.066	0.0441	1.762	0	117	70	130	2.099	1.57	25	
sec-Butylbenzene	2.087	0.0441	1.762	0	118	70	130	2.108	1.01	25	

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	1709514-02BMSD	SampType: MSD	TestCode: EPA8260_503	Units: mg/Kg-dry	Prep Date: 9/27/2017	RunNo: 98426					
Client ID:	17-071-GSSump-2	Batch ID: 39354	TestNo: EPA 8260B (EPA 5035)	Analysis Date: 9/29/2017	SeqNo: 1489483						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Butylbenzene	2.098	0.0441	1.762	0	119	70	130	2.088	0.463	25	
Carbon disulfide	1.806	0.110	1.762	0	103	70	130	1.984	9.39	25	
Carbon tetrachloride	1.292	0.0441	1.762	0	73.3	70	130	1.254	2.98	25	
Chlorobenzene	2.012	0.0441	1.762	0	114	70	130	2.031	0.915	25	
Chloroethane	1.676	0.176	1.762	0	95.1	40	120	1.777	5.87	25	
Chloroform	1.835	0.0441	1.762	0	104	70	130	1.856	1.15	25	
Chloromethane	1.805	0.0441	1.762	0	102	60	130	1.82	0.826	25	
2-Chlorotoluene	2.038	0.0441	1.762	0	116	70	130	2.045	0.345	25	
4-Chlorotoluene	2.032	0.0441	1.762	0	115	70	130	2.04	0.433	25	
1,2-Dibromo-3-chloropropane	1.289	0.881	1.762	0	73.2	70	130	1.196	7.44	25	
Dibromochloromethane	1.237	0.0441	1.762	0	70.2	70	130	1.218	1.51	25	
1,2-Dibromoethane (EDB)	2.019	0.0441	1.762	0	115	70	130	1.952	3.42	25	
Dibromomethane	1.951	0.0441	1.762	0	111	70	130	1.924	1.36	25	
1,2-Dichlorobenzene	2.022	0.0441	1.762	0	115	70	130	1.996	1.32	25	
1,3-Dichlorobenzene	1.967	0.0441	1.762	0	112	70	130	1.993	1.29	25	
1,4-Dichlorobenzene	1.953	0.0441	1.762	0	111	70	130	1.967	0.719	25	
Dichlorodifluoromethane (Freon 12)	1.698	0.176	1.762	0	96.4	40	120	1.759	3.57	25	
1,1-Dichloroethane (1,1-DCA)	1.901	0.0441	1.762	0	108	70	130	1.953	2.70	25	
1,2-Dichloroethane (EDC)	1.948	0.0441	1.762	0	111	70	130	1.953	0.271	25	
1,1-Dichloroethene (1,1-DCE)	1.887	0.0441	1.762	0	107	70	130	1.948	3.17	25	
cis-1,2-Dichloroethylene	1.871	0.0441	1.762	0	106	70	130	1.923	2.74	25	
trans-1,2-Dichloroethylene	1.899	0.0441	1.762	0	108	70	130	1.996	5.02	25	
1,2-Dichloropropane	2.040	0.0441	1.762	0	116	70	130	2.06	0.945	25	
1,3-Dichloropropane	2.005	0.0441	1.762	0	114	70	130	1.966	1.95	25	
1,1-Dichloropropene	2.049	0.0441	1.762	0	116	70	130	2.096	2.25	25	
cis-1,3-Dichloropropene	1.334	0.0441	1.762	0	75.7	70	130	1.296	2.88	25	
trans-1,3-Dichloropropene	1.468	0.0441	1.762	0	83.3	60	130	1.439	2.00	25	
Ethylbenzene	2.074	0.0441	1.762	0	118	70	130	2.078	0.212	25	
Hexachlorobutadiene	1.907	0.441	1.762	0	108	70	130	1.798	5.90	25	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID	1709514-02BMSD	SampType: MSD	TestCode: EPA8260_503	Units: mg/Kg-dry	Prep Date: 9/27/2017	RunNo: 98426					
Client ID:	17-071-GSSump-2	Batch ID: 39354	TestNo: EPA 8260B (EPA 5035)	Analysis Date: 9/29/2017	SeqNo: 1489483						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	4.160	1.76	3.524	0	118	70	130	3.928	5.75	25	
Isopropylbenzene	2.121	0.0441	1.762	0	120	70	130	2.156	1.65	25	
4-Isopropyltoluene	2.063	0.0441	1.762	0	117	70	130	2.092	1.36	25	
4-Methyl-2-pentanone (MIBK)	4.265	1.76	3.524	0	121	70	130	4.036	5.52	25	
Methyl tert-butyl ether	1.999	0.0441	1.762	0	113	70	130	1.999	0	25	
Methylene chloride	1.789	0.176	1.762	0	102	70	130	1.824	1.90	25	
Naphthalene	1.845	0.0441	1.762	0	105	70	130	1.745	5.55	25	
n-Propylbenzene	2.085	0.0441	1.762	0	118	70	130	2.113	1.30	25	
Styrene	2.126	0.0441	1.762	0	121	70	130	2.128	0.0829	25	
1,1,1,2-Tetrachloroethane	1.317	0.0441	1.762	0	74.8	70	130	1.298	1.48	25	
1,1,2,2-Tetrachloroethane	1.947	0.0441	1.762	0	110	70	130	1.869	4.11	25	
Toluene	1.951	0.0881	1.762	0	111	70	130	1.966	0.810	25	
1,2,3-Trichlorobenzene	2.022	0.0881	1.762	0	115	70	130	1.92	5.19	25	
1,2,4-Trichlorobenzene	1.999	0.0881	1.762	0	113	70	130	1.948	2.59	25	
1,1,1-Trichloroethane (1,1,1-TCA)	1.721	0.0441	1.762	0	97.6	70	130	1.715	0.308	25	
1,1,2-Trichloroethane	2.003	0.0441	1.762	0	114	70	130	1.979	1.19	25	
Trichloroethene (TCE)	2.069	0.0441	1.762	0	117	60	130	2.14	3.39	25	
Trichlorofluoromethane (Freon 11)	1.692	0.0441	1.762	0	96.0	70	130	1.787	5.42	25	
1,2,3-Trichloropropane	2.003	0.881	1.762	0	114	70	130	1.927	3.90	25	
1,2,4-Trimethylbenzene	2.059	0.0441	1.762	0	117	70	130	2.068	0.427	25	
1,3,5-Trimethylbenzene	2.114	0.0441	1.762	0	120	70	130	2.133	0.913	25	
m,p-Xylene	4.131	0.0881	3.524	0	117	70	130	4.152	0.511	25	
o-Xylene	2.112	0.0441	1.762	0.05815	117	70	130	2.112	0	25	
Surr: Dibromofluoromethane	2.679	0	3.524	0	76.0	70	130	0	0	25	
Surr: Toluene-d8	3.056	0	3.524	0	86.7	70	130	0	0	25	
Surr: 4-Bromofluorobenzene	2.856	0	3.524	0	81.0	70	130	0	0	25	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: EPA8260\_5035\_S**

Sample ID <b>1709514-02BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA8260_503</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98494</b>						
Client ID: <b>17-071-GSSump-2</b>	Batch ID: <b>39354</b>	TestNo: <b>EPA 8260B (EPA 5035)</b>	Analysis Date: <b>10/3/2017</b>	SeqNo: <b>1490417</b>							
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,2-Dichloropropane	1.513	0.0441	1.762	0	85.8	70	130	1.545	2.13	25	
Tetrachloroethene (PCE)	2.003	0.0441	1.762	0	114	70	130	2.025	1.09	25	

**Qualifiers:** E Value above quantitation range  
 ND Not Detected at the Minimum Reporting Limit

H Holding times for preparation or analysis exceeded  
 R RPD outside accepted recovery limits

J Analyte detected below quantitation limits  
 S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: HG\_S\_7471**

Sample ID <b>MB-39416</b>	SampType: <b>MBLK</b>	TestCode: <b>HG_S_7471</b>	Units: <b>mg/Kg</b>	Prep Date: <b>10/4/2017</b>	RunNo: <b>98561</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39416</b>	TestNo: <b>EPA 7471A (EPA 7471A)</b>		Analysis Date: <b>10/5/2017</b>	SeqNo: <b>1491311</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.000200

Sample ID <b>LCS-39416</b>	SampType: <b>LCS</b>	TestCode: <b>HG_S_7471</b>	Units: <b>mg/Kg</b>	Prep Date: <b>10/4/2017</b>	RunNo: <b>98561</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39416</b>	TestNo: <b>EPA 7471A (EPA 7471A)</b>		Analysis Date: <b>10/5/2017</b>	SeqNo: <b>1491312</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 8.407 0.161 7.18 0 117 50 150

Sample ID <b>1709514-01AMS</b>	SampType: <b>MS</b>	TestCode: <b>HG_S_7471</b>	Units: <b>mg/Kg</b>	Prep Date: <b>10/4/2017</b>	RunNo: <b>98561</b>						
Client ID: <b>17-071-DSump-2</b>	Batch ID: <b>39416</b>	TestNo: <b>EPA 7471A (EPA 7471A)</b>		Analysis Date: <b>10/5/2017</b>	SeqNo: <b>1491314</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.3475 0.00814 0.4071 0.01459 81.8 75 125

Sample ID <b>1709514-01AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>HG_S_7471</b>	Units: <b>mg/Kg</b>	Prep Date: <b>10/4/2017</b>	RunNo: <b>98561</b>						
Client ID: <b>17-071-DSump-2</b>	Batch ID: <b>39416</b>	TestNo: <b>EPA 7471A (EPA 7471A)</b>		Analysis Date: <b>10/5/2017</b>	SeqNo: <b>1491315</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.3676 0.00832 0.416 0.01459 84.9 75 125 0.3475 5.62 25

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: ICP\_6010\_S**

Sample ID <b>MB-39349</b>	SampType: <b>MBLK</b>	TestCode: <b>ICP_6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98401</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39349</b>	TestNo: <b>EPA 6010B (EPA 3050B)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489080</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0500									
Barium	ND	0.0500									
Cadmium	ND	0.0100									
Chromium	ND	0.0500									
Lead	ND	0.0500									
Selenium	ND	0.0500									
Silver	ND	0.00100									

Sample ID <b>LCS-39349</b>	SampType: <b>LCS</b>	TestCode: <b>ICP_6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98401</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39349</b>	TestNo: <b>EPA 6010B (EPA 3050B)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489081</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	68.92	5.24	65.4	0.0034	105	50	150				
Barium	539.9	5.24	517	0.0002	104	50	150				
Cadmium	127.4	1.05	126	0	101	50	150				
Chromium	263.9	5.24	260	0.0004	101	50	150				
Lead	218.8	5.24	212	0	103	50	150				
Selenium	75.17	5.24	73.7	0	102	50	150				
Silver	29.26	0.105	30.3	0	96.6	50	150				

Sample ID <b>1709794-01AMS</b>	SampType: <b>MS</b>	TestCode: <b>ICP_6010_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98401</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39349</b>	TestNo: <b>EPA 6010B (EPA 3050B)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489099</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.72	4.91	98.15	1.213	100	70	130				
Barium	143.5	4.91	98.15	47.19	98.1	70	130				
Cadmium	99.13	0.981	98.15	1.213	99.8	70	130				
Chromium	199.9	4.91	98.15	58.65	144	70	130				MI
Lead	97.62	4.91	98.15	1.518	97.9	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: ICP\_6010\_S**

Sample ID <b>1709794-01AMS</b>	SampType: <b>MS</b>	TestCode: <b>ICP_6010_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98401</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39349</b>	TestNo: <b>EPA 6010B (EPA 3050B)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489099</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	91.82	4.91	98.15	0	93.6	70	130				
Silver	91.23	0.0981	98.15	0	93.0	70	130				

Sample ID <b>1709794-01AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>ICP_6010_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98401</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39349</b>	TestNo: <b>EPA 6010B (EPA 3050B)</b>		Analysis Date: <b>9/28/2017</b>	SeqNo: <b>1489100</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	103.1	5.14	102.8	1.213	99.1	70	130	99.72	3.31	25	
Barium	148.8	5.14	102.8	47.19	98.9	70	130	143.5	3.64	25	
Cadmium	101.7	1.03	102.8	1.213	97.8	70	130	99.13	2.54	25	
Chromium	167.5	5.14	102.8	58.65	106	70	130	199.9	17.6	25	
Lead	100.9	5.14	102.8	1.518	96.7	70	130	97.62	3.33	25	
Selenium	93.57	5.14	102.8	0	91.0	70	130	91.82	1.88	25	
Silver	94.97	0.103	102.8	0	92.4	70	130	91.23	4.02	25	

**Qualifiers:** E Value above quantitation range  
 ND Not Detected at the Minimum Reporting Limit

H Holding times for preparation or analysis exceeded  
 R RPD outside accepted recovery limits

J Analyte detected below quantitation limits  
 S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: NWTPHDX\_S**

Sample ID <b>MB-39248</b>	SampType: <b>MBLK</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98106</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39248</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484572</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	ND	12.5									
TPH as Lube Oil	ND	25.0									
Surr: o-Terphenyl	3.957	0	5	0	79.1	50	150				

Sample ID <b>LCS-39248</b>	SampType: <b>LCS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98106</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39248</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484573</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	217.6	12.5	250	3.99	85.4	50	150				
Surr: o-Terphenyl	4.198	0	5	0	84.0	50	150				

Sample ID <b>1709513-01AMS</b>	SampType: <b>MS</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98106</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39248</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484577</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	229.9	13.0	259.7	0	88.5	50	150				
Surr: o-Terphenyl	4.440	0	5.194	0	85.5	50	150				

Sample ID <b>1709513-01AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98106</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39248</b>	TestNo: <b>NWTPH-DX</b>	(EPA 3550B)	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484578</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH as Diesel	225.2	13.0	260.9	0	86.3	50	150	229.9	2.05	25	
Surr: o-Terphenyl	4.390	0	5.218	0	84.1	50	150	0	0	0	

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode:** NWTPHGX\_5035\_S

Sample ID <b>MB-39255</b>	SampType: <b>MBLK</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98112</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39255</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484709</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	ND	2.50									
Surr: 4-Bromofluorobenzene	1.786	0	2	0	89.3	50	150				

Sample ID <b>LCS-39255</b>	SampType: <b>LCS</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98112</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39255</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484708</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	24.27	2.50	25	0	97.1	70	130				
Surr: 4-Bromofluorobenzene	1.967	0	2	0	98.4	50	150				

Sample ID <b>1709514-02BMS</b>	SampType: <b>MS</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98112</b>						
Client ID: <b>17-071-GSSump-2</b>	Batch ID: <b>39255</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484711</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	51.97	3.82	38.17	0	136	70	130				MI
Surr: 4-Bromofluorobenzene	4.572	0	3.053	0	150	50	150				

Sample ID <b>1709514-02BMSD</b>	SampType: <b>MSD</b>	TestCode: <b>NWTPHGX_5</b>	Units: <b>mg/Kg-dry</b>	Prep Date: <b>9/15/2017</b>	RunNo: <b>98112</b>						
Client ID: <b>17-071-GSSump-2</b>	Batch ID: <b>39255</b>	TestNo: <b>NWTPH-GX</b>	( <b>EPA 5035</b> )	Analysis Date: <b>9/15/2017</b>	SeqNo: <b>1484712</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH as Gasoline	49.63	3.82	38.17	0	130	70	130	51.97	4.61	25	MI
Surr: 4-Bromofluorobenzene	4.399	0	3.053	0	144	50	150	0	0	0	

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: PAHSOIL**

Sample ID <b>MB-39362</b>	SampType: <b>MBLK</b>	TestCode: <b>PAHSOIL</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98536</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39362</b>	TestNo: <b>EPA 8270C (EPA 3550B)</b>		Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1490912</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.0100									
Acenaphthylene	ND	0.0100									
Anthracene	ND	0.0100									
Benzo(a)anthracene	ND	0.0100									
Benzo(a)pyrene	ND	0.0100									
Benzo(b)fluoranthene	ND	0.0100									
Benzo(k)fluoranthene	ND	0.0100									
Benzo(g,h,i)perylene	ND	0.0100									
Chrysene	ND	0.0100									
Dibenz(a,h)anthracene	ND	0.0100									
Fluoranthene	ND	0.0100									
Fluorene	ND	0.0100									
Indeno(1,2,3-cd)pyrene	ND	0.0100									
Naphthalene	ND	0.0100									
Phenanthrene	ND	0.0100									
Pyrene	ND	0.0100									
Surr: 2-Fluorobiphenyl	0.3815	0	0.5	0	76.3	70	130				
Surr: 4-Terphenyl-d14	0.4150	0	0.5	0	83.0	70	130				

Sample ID <b>LCS-39362</b>	SampType: <b>LCS</b>	TestCode: <b>PAHSOIL</b>	Units: <b>mg/Kg</b>	Prep Date: <b>9/27/2017</b>	RunNo: <b>98536</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>39362</b>	TestNo: <b>EPA 8270C (EPA 3550B)</b>		Analysis Date: <b>10/4/2017</b>	SeqNo: <b>1490913</b>						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	0.4645	0.0100	0.5	0	92.9	70	110				
Acenaphthylene	0.4610	0.0100	0.5	0	92.2	70	120				
Anthracene	0.4575	0.0100	0.5	0	91.5	70	120				
Benzo(a)anthracene	0.4955	0.0100	0.5	0	99.1	70	120				
Benzo(a)pyrene	0.4830	0.0100	0.5	0	96.6	70	120				
Benzo(b)fluoranthene	0.4705	0.0100	0.5	0	94.1	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: PAHSOIL**

Sample ID	<b>LCS-39362</b>	SampType:	<b>LCS</b>	TestCode:	<b>PAHSOIL</b>	Units:	<b>mg/Kg</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98536</b>
Client ID:	<b>ZZZZZ</b>	Batch ID:	<b>39362</b>	TestNo:	<b>EPA 8270C</b>	(EPA 3550B)		Analysis Date:	<b>10/4/2017</b>	SeqNo:	<b>1490913</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	0.4815	0.0100	0.5	0	96.3	70	125				
Benzo(g,h,i)perylene	0.5130	0.0100	0.5	0	103	70	130				
Chrysene	0.5175	0.0100	0.5	0	104	70	130				
Dibenz(a,h)anthracene	0.5130	0.0100	0.5	0	103	70	120				
Fluoranthene	0.4460	0.0100	0.5	0	89.2	70	120				
Fluorene	0.4900	0.0100	0.5	0	98.0	70	115				
Indeno(1,2,3-cd)pyrene	0.5145	0.0100	0.5	0	103	70	120				
Naphthalene	0.4380	0.0100	0.5	0	87.6	70	110				
Phenanthrene	0.4885	0.0100	0.5	0	97.7	70	115				
Pyrene	0.4295	0.0100	0.5	0	85.9	70	120				
Surr: 2-Fluorobiphenyl	0.3815	0	0.5	0	76.3	70	130				
Surr: 4-Terphenyl-d14	0.4310	0	0.5	0	86.2	70	130				

Sample ID	<b>1709514-01AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>PAHSOIL</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98536</b>
Client ID:	<b>17-071-DSump-2</b>	Batch ID:	<b>39362</b>	TestNo:	<b>EPA 8270C</b>	(EPA 3550B)		Analysis Date:	<b>10/5/2017</b>	SeqNo:	<b>1490922</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	0.5202	0.0115	0.5754	0	90.4	70	130				
Acenaphthylene	0.5156	0.0115	0.5754	0	89.6	70	130				
Anthracene	0.4701	0.0115	0.5754	0	81.7	70	130				
Benzo(a)anthracene	0.5892	0.0115	0.5754	0	102	70	130				
Benzo(a)pyrene	0.5771	0.0115	0.5754	0	100	70	130				
Benzo(b)fluoranthene	0.5691	0.0115	0.5754	0	98.9	70	130				
Benzo(k)fluoranthene	0.5012	0.0115	0.5754	0	87.1	70	130				
Benzo(g,h,i)perylene	0.5737	0.0115	0.5754	0	99.7	70	130				
Chrysene	0.5530	0.0115	0.5754	0	96.1	70	130				
Dibenz(a,h)anthracene	0.5863	0.0115	0.5754	0	102	70	130				
Fluoranthene	0.6088	0.0115	0.5754	0	106	70	130				
Fluorene	0.5081	0.0115	0.5754	0	88.3	70	130				

**Qualifiers:** E Value above quantitation range      H Holding times for preparation or analysis exceeded      J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit      R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

**CLIENT:** Western States Environmental  
**Work Order:** 1709514  
**Project:** Tiller Ranger Station 17-071

**ANALYTICAL QC SUMMARY REPORT**

**TestCode: PAHSOIL**

Sample ID	<b>1709514-01AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>PAHSOIL</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98536</b>
Client ID:	<b>17-071-DSump-2</b>	Batch ID:	<b>39362</b>	TestNo:	<b>EPA 8270C (EPA 3550B)</b>			Analysis Date:	<b>10/5/2017</b>	SeqNo:	<b>1490922</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Indeno(1,2,3-cd)pyrene	0.5794	0.0115	0.5754	0	101	70	130				
Naphthalene	0.4931	0.0115	0.5754	0	85.7	70	130				
Phenanthrene	0.5564	0.0115	0.5754	0	96.7	70	130				
Pyrene	0.6289	0.0115	0.5754	0	109	70	130				
Surr: 2-Fluorobiphenyl	0.4241	0	0.5754	0	73.7	70	130				
Surr: 4-Terphenyl-d14	0.3936	0	0.5754	0	68.4	70	130				MI

Sample ID	<b>1709514-01AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>PAHSOIL</b>	Units:	<b>mg/Kg-dry</b>	Prep Date:	<b>9/27/2017</b>	RunNo:	<b>98536</b>
Client ID:	<b>17-071-DSump-2</b>	Batch ID:	<b>39362</b>	TestNo:	<b>EPA 8270C (EPA 3550B)</b>			Analysis Date:	<b>10/5/2017</b>	SeqNo:	<b>1490923</b>
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	0.4826	0.0118	0.5915	0	81.6	70	130	0.5202	7.49	25	
Acenaphthylene	0.4956	0.0118	0.5915	0	83.8	70	130	0.5156	3.94	25	
Anthracene	0.2957	0.0118	0.5915	0	50.0	70	130	0.4701	45.5	25	MI
Benzo(a)anthracene	0.5725	0.0118	0.5915	0	96.8	70	130	0.5892	2.87	25	
Benzo(a)pyrene	0.5453	0.0118	0.5915	0	92.2	70	130	0.5771	5.67	25	
Benzo(b)fluoranthene	0.5305	0.0118	0.5915	0	89.7	70	130	0.5691	7.01	25	
Benzo(k)fluoranthene	0.4874	0.0118	0.5915	0	82.4	70	130	0.5012	2.79	25	
Benzo(g,h,i)perylene	0.5282	0.0118	0.5915	0	89.3	70	130	0.5737	8.26	25	
Chrysene	0.5104	0.0118	0.5915	0	86.3	70	130	0.553	8.00	25	
Dibenz(a,h)anthracene	0.5465	0.0118	0.5915	0	92.4	70	130	0.5863	7.03	25	
Fluoranthene	0.4915	0.0118	0.5915	0	83.1	70	130	0.6088	21.3	25	
Fluorene	0.4536	0.0118	0.5915	0	76.7	70	130	0.5081	11.3	25	
Indeno(1,2,3-cd)pyrene	0.5359	0.0118	0.5915	0	90.6	70	130	0.5794	7.81	25	
Naphthalene	0.4874	0.0118	0.5915	0	82.4	70	130	0.4931	1.17	25	
Phenanthrene	0.6382	0.0118	0.5915	0	108	70	130	0.5564	13.7	25	
Pyrene	0.4968	0.0118	0.5915	0	84.0	70	130	0.6289	23.5	25	
Surr: 2-Fluorobiphenyl	0.3963	0	0.5915	0	67.0	70	130	0	0	0	MI
Surr: 4-Terphenyl-d14	0.2916	0	0.5915	0	49.3	70	130	0	0	0	MI

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



# Chain of Custody Record

# RUSH

**Environmental Testing Laboratory**  
 245 South Grape Street \* Medford, OR 97501  
 (541) 770-5678 fax (541) 770-2901

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately

<b>Section A</b> Required Client Information	<b>Section B</b> Required Project Information	<b>Section C</b> Invoice Information	<b>Section D</b> Rush Status (Subject to Scheduling)
Company: Western States Environmental Services, Inc	Project Name: Tiller Ranger Station	Attention: Suzan	<input checked="" type="checkbox"/> Standard 10-14 Days
Address: PO Box 787	Project Number: 17-071	Company Name: WSES	<input type="checkbox"/> 5 Business Days (50% surcharge)
Medford, OR 97501	Report To: Jearly@wsenvironmental.com	Address: PO Box 787	<input type="checkbox"/> 3 Business Days (75% surcharge)
Email: jearly@wsenvironmental.com, searly@wsenvironmental.com	Copy To: searly@wsenvironmental.com	Medford, OR 97501	<input checked="" type="checkbox"/> 24 - 48 hours (100% surcharge)
Phone: 541 770-2482 Fax: 541 772-0293		P.O. #	<input type="checkbox"/> Other _____
Collected By (Print): John Early			Authorized <input type="checkbox"/> Yes <input type="checkbox"/> No
Collected By (Sign):			
Email Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Mail Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Fax Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			

Section E Sample Information					Analysis Requested										NRC Workorder # (Lab Use Only)	
Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers	NW TPH-Dx	NW TPH-Gx	PAHs	BTEX	TRCAs	Full S260	Remarks/Field Data		NRC Sample # (Lab Use Only)		
17-071-DSump-2	Grab	S	9/14/2017	10:00	7 <del>8</del>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Hold BTEX & PAHs as per 5035A		01A/B		
17-071-GSSump-2	Grab	S	9/14/2017	10:00	4 <del>8</del>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		Hold BTEX & PAHs as per 5035A		02A/B		
												added 9/20/17 per Client req.				

\*Matrix: DW - Drinking Water WW - Wastewater W - Water S - Soil/Solid SL - Sludge O - Oil WP - Wipe OT - Other

Relinquish/Receive	Sign	Print	Date	Time
Relinquished By:		John Early	9/14/17	12:38
Received By:				
Relinquished By:				
Received By Laboratory:		James Schneider	9/14/17	12:38

Section G Lab Use Only	
Temp:	13.10
4°C +/- 2°C:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Received on Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Bottles Received:	8
pH Checked:	NA
COC Seals Intact:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Field Blank Included:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Received Via  UPS  FedEx  Other  Hand

Payment:  Invoice  Cash  VISA, M/C  Check # \_\_\_\_\_ Amount \_\_\_\_\_

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## **APPENDIX C**

### **Decommissioning Documents**

