February 19, 2021 Project No. 923-1000-006.2020

Mr. Bill Kombol
Landsburg PLP Group
31407 Highway 169
PO Box 10
Black Diamond, WA 98010

LANDSBURG MINE SITE SHORT-TERM COMPLIANCE MONITORING REPORT NOVEMBER 2020 SAMPLING

Dear Bill,

The Compliance Monitoring Plan (CMP) (Golder 2017)[1] requires short-term compliance monitoring be conducted during the remediation to ensure that there are no adverse effects to the environment from remediation activities. The CMP states that short-term compliance monitoring will commence when the trench-backfilling begins and will continue for a period of four weeks following completion of the backfilling. To meet this requirement Golder Associates Inc. (Golder) completed short-term compliance monitoring events at the Landsburg Mine Site (the Site) starting in September 2020 and extending for four weeks following completion of the backfilling, which was completed on November 2, 2020. This letter report presents the results of the final short-term monitoring event completed in November 2020. The event was conducted from November 23 to 25, 2020, and included collecting groundwater samples from monitoring wells LMW-2, LMW-3, LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-10, LMW-11, LMW-12, LMW-13R, LMW-14, and LMW-15. The event also qualified as a quarterly monitoring event for the North End Wells (LMW-2, LMW-4, LMW-10, LMW-12, LMW-13R).

Figure 1 presents the locations of the monitoring wells. Figure 2 presents a cross-section along the strike at the coal seam that also depicts the location of the monitoring wells. Monitoring wells LMW-2, LMW-4, LMW-10, LMW-12 and LMW-13R are completed to monitor shallow, middle, and deeper zones within the north end of the Rogers Coal Mine subsidence trench. Monitoring wells LMW-3, LMW-5, LMW-8, LMW-9, LMW-11, LMW-14 and LMW-15 are completed to monitor shallow, middle and deeper zones along the southern half of the Rogers Coal Mine. Wells LMW-6 and LMW-7 monitor groundwater from the Frasier and Landsburg Coal Mines to the west and east of the Rogers Coal Mine, respectively.

[1] Golder Associates Inc. (Golder). 2017. Exhibit D of the Consent Decree – Compliance Monitoring Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. Prepared by Golder Associates Inc. June 7.

Groundwater sampling was conducted in accordance with the CMP (Golder 2017), and included the following activities:

- Measurement of static water levels at monitoring wells.
- Well purging with the dedicated pumping systems installed in each well to ensure sample representativeness.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, oxidation-reduction potential (ORP) and turbidity.
- Collection of representative samples in appropriate containers provided by the analytical laboratory and associated analyses of groundwater samples.
    - Groundwater samples were analyzed for volatile organic compounds (VOCs; United States Environmental Protection Agency [EPA] Method 8260D) and a total petroleum hydrocarbon (TPH) identification scan (NWTPH-HCID). In accordance with the CMP, the groundwater samples collected during the event were analyzed for VOCs and TPH.
    - Groundwater samples collected from North End wells (LMW-2, LMW-4, LMW-10, LMW-12, LMW-13R) during the event were also analyzed for 1,4-dioxane (EPA Method 8270E). Quarterly monitoring for all Site groundwater monitoring wells located on the north end of the Site has been conducted since May 2018 to provide additional data on the detection of 1,4-dioxane in LMW-2, LMW-4, and LMW-12.

Appendix A presents the laboratory analytical reports and the data validation report with added data qualifiers noted. Field sampling activities were documented on Sample Integrity Data Sheets (SIDS), provided in Appendix B. Table 1 presents depths to groundwater measured during the event and calculated static water level elevations.

Following sample collection, all bottles were sealed, labeled, and placed in an iced cooler until delivery to the laboratory. Groundwater samples were transported under chain-of-custody procedures to Analytical Resources Incorporated (ARI), of Tukwila, Washington, for analyses.

The laboratory data packages underwent data validation. Items of note are provided in a validation memorandum in Appendix A. In general, data were found to be acceptable with minor qualification, with the following exception: the analytical result for 2-chloroethyl vinyl ether reported for sample LMW-2-1120 was rejected. The matrix spike/ matrix spike duplicate (MS/MSD) results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following Guidelines and using professional judgment, the non-detect result for 2-chloroethyl vinyl ether for LMW-2-1120 was rejected. 2-chloroethyl vinyl ether has never been detected at the Site. Data qualifiers are defined, and all data qualifiers assigned under the data validation process are presented in the Appendix A data validation memorandum.

Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample. Laboratory analyses did not detect any total petroleum hydrocarbon in any of the groundwater samples.

The only parameter detected in groundwater samples above the reporting limit during the November 2020 sampling event was 1,4-dioxane.

1,4-Dioxane was detected in LMW-2 (2.3 µg/L) and LMW-4 (2.3 µg/L and 2.4 µg/L duplicate), but was not detected in LMW-12, LMW-10 and LMW-13R. The MTCA Method B groundwater cleanup level for 1,4-dioxane is 0.44 µg/L. 1,4-Dioxane concentrations reported in LMW-2 and LMW-4 during the November 2020 round are similar to the concentrations initially reported in November 2017. The concentrations reported in these wells varies by less than two times the laboratory detection limit. 1,4-Dioxane was not detected in LMW-12 during the current sampling round, which is consistent with the low concentrations historically reported in this well, which range from not detected to 1.6 µg/L. 1,4-Dioxane has never been detected in LMW-10, LMW-13, or any other Site monitoring wells. The 1,4-dioxane detection is being addressed by the Landsburg Mine Site Group in consultation with Ecology.

Table 3 presents the groundwater quality parameters (pH, specific conductance, temperature, dissolved oxygen, ORP, and turbidity) for the events completed in 2020. Groundwater quality parameters measured during the remedial actions are within historical norms.

If you have any questions or require any additional information, please contact Gary Zimmerman at (425) 883-0777.

Sincerely,

Golder Associates Inc.

Joseph X.
Senior Project Engineer

Gary Zimmerman
Principal

JX/GZ/sb

Attachments: Table 1: Groundwater Elevation Data, Landsburg Mine Site, November 23, 2020
Table 2: November 2020 Groundwater Analytical Results Landsburg Mine Site
Table 3: Short-Term Monitoring Groundwater Parameter Trends
Figure 1: Groundwater Monitoring Locations
Figure 2: Cross-Section along Strike at Coal Seam, November 23, 2020
Appendix A: Laboratory Analytical Reports Data Validation and Quality Assurance / Quality Control Review Memorandum and November 2020 Laboratory Analytical Report
Appendix B: Sample Integrity Data Sheets (SIDS)

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Tables

Table 1: Groundwater Elevation Data, Landsburg Mine Site, November 23, 2020

	LMW-1	LMW-2	LMW-3	LMW-4[1]	LMW-5	LMW-6	LMW-7[1]	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14[1]	LMW-15
Water Depths															
Date of data collection	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020	11/23/2020
Time of data collection	10:35 AM	8:25 AM	9:54 AM	9:03 AM	10:00 AM	10:27 AM	11:13 AM	10:03 AM	9:45 AM	9:01 AM	10:51 AM	8:55 AM	8:58 AM	10:44 AM	10:57 AM
Measured to Top of PVC (ft btc)	135.98	9.10	12.51	8.05	14.06	36.01	214.54	3.94	99.91	0.10	157.76	6.11	6.62	160.01	151.88
Surveyed Elevation															
Top of PVC (ft asl)	765.36	617.79	656.75	619.27	658.27	632.33	771.51	646.97	743.99	618.98	802.19	625.35	625.86	805.12	796.46
Top of Monument (ft asl)	766.16	618.38	657.48	619.89	658.87	633.00	771.88	NC	NC	619.10	802.51	625.49	625.91	805.14	796.61
Ground Level (ft asl)	763.02	614.92	654.40	617.37	655.63	629.95	768.79	645.25	741.13	615.78	799.89	621.90	622.07	802.22	792.64
Corrected Water Elevation															
Using PVC elevation (ft asl)	**629.38**	**608.69**	**644.24**	**611.22**	**644.21**	**596.32**	**556.97**	**643.03**	**644.08**	**618.88**	**644.43**	**619.24**	**619.24**	**645.11**	**644.58**

Notes:

[1] Data corrected to accommodate well inclination from vertical

NA = Not applicable

NC = Data not collected

ft btc = feet below top of casing

ft asl = feet above sea level

Table 2: November 2020 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-4 Duplicate	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank 1	Trip Blank 2
		11/23/2020	11/24/2020	11/23/2020	11/23/2020	11/24/2020	11/24/2020	11/24/2020	11/24/2020	11/24/2020	11/23/2020	11/25/2020	11/23/2020	11/23/2020	11/25/2020	11/25/2020	11/23/2020	-	-
Field Parameter																			
Temperature	°C	10.9	11.3	10.6	-	10.9	10.1	13.4	11.3	10.6	9.8	10.0	10.5	10.2	10.1	9.5	-	-	-
pH	stnd	6.84	7.68	6.88	-	6.84	6.77	7.07	6.74	6.95	8.74	7.22	6.59	7.36	6.56	7.48	-	-	-
Specific Conductance	uS/cm	715	246.7	720	-	542	202	449	474	518	257	404	453	654	933	359	-	-	-
Dissolved Oxygen	mg/L	0.59	0.61	0.66	-	0.62	0.68	0.67	0.62	0.76	0.63	0.94	0.61	0.63	0.68	0.86	-	-	-
ORP	mV	-69.3	20.5	-83.7	-	-6.2	-21.1	-42.6	-65.0	-34.2	-190.4	-40.6	-36.3	-81.5	-30.1	-133.9	-	-	-
Turbidity	NTU	0.22	0.84	0.37	-	0.16	1.21	1.33	7.17	0.22	0.94	0.43	6.42	0.53	3.73	2.13	-	-	-
Volatile Organic Compounds (VOCs)																			
Acetone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Acrylonitrile	ug/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Benzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
methyl ethyl ketone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Sec-Butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-butylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Disulfide	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Chloroethyl vinyl ether	ug/L	1 R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Chloroform	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	ug/L	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorotoluene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylene Dibromide	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromomethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,4-Dichloro-2-butene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cis-1,2-Dichloroethene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	ug/L	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2-Dichloropropane	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cis-1,3-Dichloropropene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iodomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cumene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 2: November 2020 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-4 Duplicate	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank 1	Trip Blank 2
Methyl isobutyl ketone	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Naphthalene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1,2-Tetrachloroethane	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Acetate	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Chloride	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
m, p-Xylene	ug/L	0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene	ug/L	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Total Xylenes	ug/L	0.6 UJ	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Semi-Volatile Organic Compounds (SVOCs)																			
1,4-Dioxane	ug/L	**2.3**	NA	**2.3**	**2.4**	NA	NA	NA	NA	NA	0.4 U	NA	0.4 U	0.4 U	NA	NA	0.4 U	NA	NA
Hydrocarbon Identification																			
Diesel Range	mg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA
Gas Range	mg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA
Lube Oil Range	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA

Notes:
U - Analyte was not detected above the Reporting Limit (RL).
J - Analyte was detected above the Method Detection Limit (MDL) but below the RL.
R - Analytical result is unusable because certain data quality criteria were not met.

Table 3: Short-Term Monitoring Groundwater Parameter Trends

Well	Date	Temperature (°C)	pH	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
LMW-2	3/11/2020	10.3	7.57	748	0.31	-244.6	1.58
LMW-2	6/25/2020	11.3	6.79	777	0.43	-124.8	0.33
LMW-2	9/16/2020	12.0	6.9	761	0.01	-60.5	0.19
LMW-2	9/28/2020	11.2	6.48	652	0.58	-133.1	0.45
LMW-2	10/15/2020	10.9	6.91	750	0.54	Note 1	1.36
LMW-2	11/2/2020	11.2	6.92	738	Note 1	-44.9	0.33
LMW-2	11/23/2020	10.9	6.84	715	0.59	-69.3	0.22
LMW-3	3/12/2020	10.8	7.68	224	0.33	-63.7	0.61
LMW-3	9/18/2020	11.6	7.49	240.3	0.09	163.1	0.17
LMW-3	9/29/2020	11.1	7.38	207.2	0.63	87.5	0.28
LMW-3	10/16/2020	11.5	7.77	211.3	0.35	Note 1	0.44
LMW-3	11/2/2020	11.5	7.83	234.2	Note 1	7.4	0.4
LMW-3	11/24/2020	11.3	7.68	246.7	0.61	20.5	0.84
LMW-4	3/10/2020	10.0	7.76	710	0.36	-98.5	0.42
LMW-4	6/25/2020	11.0	6.82	746	0.43	-131.2	0.20
LMW-4	9/16/2020	11.7	6.98	755	0.03	-31.7	0.51
LMW-4	9/28/2029	10.7	6.71	630	0.62	-142.9	0.21
LMW-4	10/15/2020	10.8	6.95	776	0.42	Note 1	0.14
LMW-4	11/2/2020	10.8	7.01	726	Note 1	-45.4	0.31
LMW-4	11/23/2020	10.6	6.88	720	0.66	-83.7	0.37
LMW-5	3/12/2020	10.5	6.56	507	0.3	-117.4	0.67
LMW-5	9/18/2020	11.1	6.84	542	0	-76.5	0.24
LMW-5	9/29/2020	10.6	6.64	445.3	0.6	-41.3	0.25
LMW-5	10/15/2020	10.7	6.91	467.5	0.32	Note 1	1.65
LMW-5	11/2/2020	10.9	7.00	519	Note 1	-13.6	0.41
LMW-5	11/24/2020	10.9	6.84	542	0.62	-6.2	0.16
LMW-6	3/11/2020	9.5	7.73	184	0.36	-92.8	0.49
LMW-6	9/17/2020	10.4	6.56	197	0.1	-27.1	2.32
LMW-6	9/28/2020	10.0	6.75	159	0.64	-79.7	1.42
LMW-6	10/15/2020	10.4	6.93	202	0.54	Note 1	2.08
LMW-6	11/2/2020	10.0	7.02	197	Note 1	-40.2	1.24
LMW-6	11/24/2020	10.1	6.77	202	0.68	-21.1	1.21
LMW-7	3/10/2020	13.6	7.44	414	0.52	-63.1	1.69
LMW-7	9/17/2020	15.5	7.48	409	0.27	-94.8	1.8
LMW-7	9/29/2020	13.9	7.15	371	0.82	-80.1	1.08
LMW-7	10/15/2020	14.1	7.39	416	0.49	Note 1	2.7
LMW-7	11/2/2020	13.8	7.35	400	0.01	-46.8	1.22
LMW-7	11/24/2020	13.4	7.07	449	0.67	-42.6	1.33
LMW-8	3/12/2020	8.8	6.13	343	0.93	-81.9	11.7
LMW-8	4/21/2020	10.1	6.57	369	0.05	-78.1	5.23
LMW-8	9/18/2020	14.0	6.82	499	0.14	-111.2	1.91
LMW-8	9/29/2020	13.6	6.67	440	0.59	-95.3	0.71
LMW-8	10/16/2020	12.4	6.84	444	0.52	Note 1	2.43
LMW-8	10/29/2020	12.6	6.72	477	0.51	-63.5	3.91
LMW-8	11/24/2020	11.3	6.74	474	0.62	-65.0	7.17

Table 3: Short-Term Monitoring Groundwater Parameter Trends

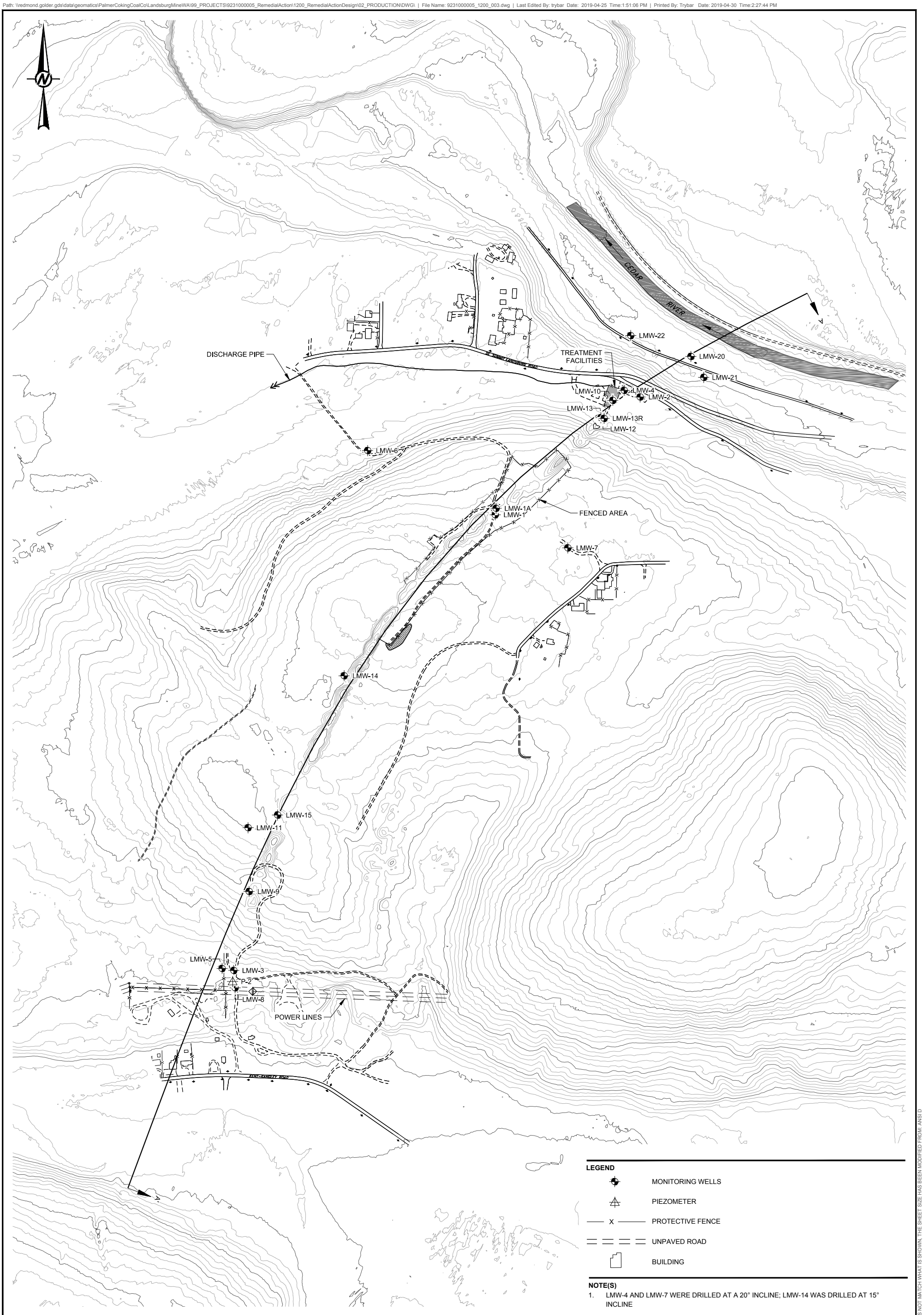
Well	Date	Temperature (°C)	pH	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
LMW-9	3/12/2020	10.2	7.13	466	0.43	-106.5	0.74
LMW-9	9/17/2020	11.0	7.04	522	0.17	-72.9	0.17
LMW-9	9/29/2020	10.3	6.69	479	0.83	-35.5	0.69
LMW-9	10/14/2020	10.4	7.09	512	0.67	Note 1	0.68
LMW-9	10/29/2020	10.6	6.93	496	0.05	-29.1	1.27
LMW-9	11/24/2020	10.6	6.95	518	0.76	-34.2	0.22
LMW-10	3/10/2020	9.1	9.19	261	0.31	-242.3	0.13
LMW-10	6/25/2020	12.3	8.59	290	0.42	-213.0	0.73
LMW-10	9/16/2020	11.5	8.32	277	0	-165.5	0.31
LMW-10	9/28/2020	11.2	8.5	219	0.59	-240.9	0.23
LMW-10	10/14/2020	10.8	8.7	272	1.06	Note 1	1.09
LMW-10	10/29/2020	10.6	8.34	262	Note 1	-129.2	0.69
LMW-10	11/23/2020	9.8	8.74	257	0.63	-190.4	0.94
LMW-11	3/11/2020	9.6	8.38	382	0.62	-90.5	1.71
LMW-11	9/17/2020	10.4	7.09	412	0.37	-78.6	0.66
LMW-11	9/28/2020	10.1	7.04	300	1.00	-99.5	0.30
LMW-11	10/14/2020	9.8	7.28	399	1.94	Note 1	0.89
LMW-11	10/29/2020	10.2	7.05	386	0.11	-34.4	0.54
LMW-11	11/25/2020	10.0	7.22	404	0.94	-40.6	0.43
LMW-12	3/10/2020	9.8	7.08	614	0.29	-111.0	12.0
LMW-12	6/25/2020	11.4	6.58	578	0.39	-84.2	1.05
LMW-12	9/16/2020	11.4	6.67	615	0.14	-81.0	6.05
LMW-12	9/28/2020	11.2	6.37	319	0.58	-88.8	7.62
LMW-12	10/14/2020	10.7	6.72	529	2.7	Note 1	1.79
LMW-12	10/29/2020	11.0	6.39	539	0.71	-50.4	2.95
LMW-12	11/24/2020	10.5	6.59	453	0.61	-36.3	6.42
LMW-13R	3/10/2020	9.5	7.36	663	0.35	-147.7	1.08
LMW-13R	6/25/2020	11.2	7.33	692	0.42	-121.8	0.76
LMW-13R	9/16/2020	11.7	7.31	697	0.03	-130.2	0.56
LMW-13R	9/28/2020	11.5	7.14	550	1.17	-131	0.34
LMW-13R	10/14/2020	10.6	7.42	684	0.56	Note 1	0.52
LMW-13R	10/29/2020	10.7	7.16	664	Note 1	-83.5	0.38
LMW-13R	11/23/2020	10.2	7.36	654	0.63	-81.5	0.53
LMW-14	3/11/2020	9.5	7.64	1596	0.33	-86.8	3.44
LMW-14	4/21/2020	10.0	6.33	1262	0.08	-56.3	2.45
LMW-14	9/17/2020	11.3	6.64	880	0.08	-51.7	8.87
LMW-14	9/28/2020	11.2	6.54	702	0.6	-83.2	4.36
LMW-14	10/14/2020	10.3	6.69	882	1.94	Note 1	3.25
LMW-14	10/29/2020	10.8	6.5	857	2.86	-30.8	4.00
LMW-14	11/25/2020	10.1	6.56	933	0.68	-30.1	3.73
LMW-15	3/11/2020	9.1	8.56	346	0.62	-157.7	2.55
LMW-15	9/17/2020	10.2	7.39	369	0.35	-138.4	2.71
LMW-15	9/28/2020	9.9	7.28	278	0.91	-159.4	1.07
LMW-15	10/14/2020	9.5	7.56	356	2.25	Note 1	1.72
LMW-15	10/29/2020	9.9	7.24	342	0.16	-113.2	2.07
LMW-15	11/25/2020	9.5	7.48	359	0.86	-133.9	2.13

NC - Not Collected

Notes:

1 - No values recorded due to faulty meter.

Figures



LEGEND

- MONITORING WELLS
- PIEZOMETER
- PROTECTIVE FENCE
- UNPAVED ROAD
- BUILDING

NOTE(S)

1. LMW-4 AND LMW-7 WERE DRILLED AT A 20° INCLINE; LMW-14 WAS DRILLED AT 15° INCLINE

0 300 600
1" = 300' FEET

CLIENT
LANDSBURG MINE SITE PLP GROUP

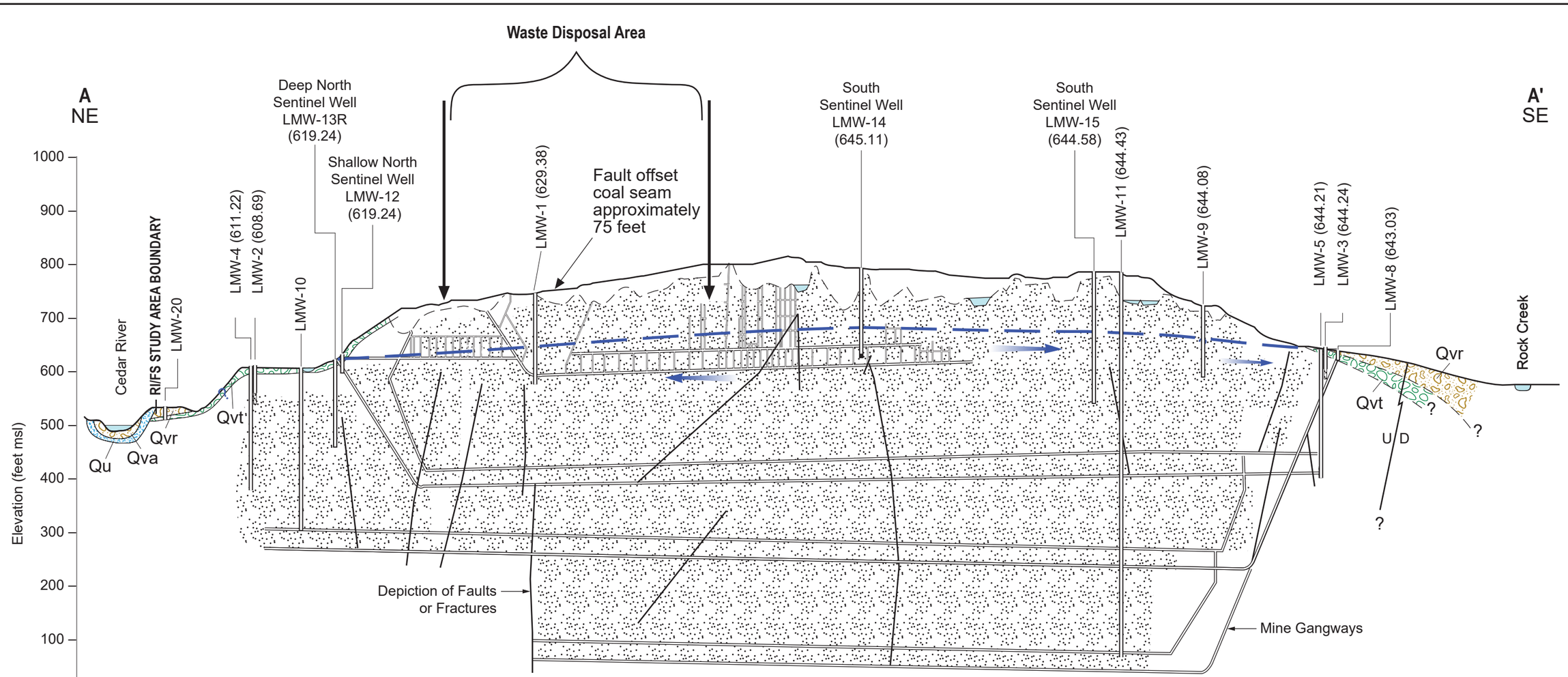
CONSULTANT
GOLDER

YYYY-MM-DD	2019-04-25
DESIGNED	XXX
PREPARED	XXX
REVIEWED	XXX
APPROVED	XXX

PROJECT
LANDSBURG MINE SITE
MTCA REMEDIAL ACTION

TITLE
SITE MAP

PROJECT NO.	PHASE	REV.	SHEET
9231000005	1200	A	1



EXPLANATION

- Potentiometric surface
- Outline of trench bottom
- LMW-2 (609.99) Well ID (water level in ft. amsl)
- Qvt Till, compact mixture of gravel occasional boulders in clayey silty sand matrix
- Sandstone
- Surface water feature
- Anticipated collapsed zone within mine
- Qu Drift, till, fluvial sand and gravel, lacustrine sand, silt, clay and peat
- Qvr Recessional outwash, well sorted sand and pebble-cobble
- Qva Advanced outwash pebble-cobble gravel may include very fine sand
- Monitoring Interval
- Groundwater Flow Direction

0 500
FEET

Sources for the Geology and Mine Information:
J.E. Luzier 1969; surficial geology
State of Washington, Water Well reports
Mine Superintendant's Records
Landsburg Well Logs

NOTE: Vertical to horizontal scale ratio is 2.5:1
Wells are project normal into the strike of the Cross-Section A-A' Groundwater elevation obtained 11/23/2020

CLIENT	LANDSBURG PLP GROUP
CONSULTANT	GOLDER
YYYY-MM-DD	2020-08-17
PREPARED	REDMOND
DESIGN	
REVIEW	
APPROVED	
PROJECT	LANDSBURG MINE SITE
TITLE	CROSS-SECTION ALONG STRIKE AT COAL SEAM NOVEMBER 23, 2020 CROSS-SECTION A-A'
PROJECT No.	923-1000-006
PHASE	2020
FIGURE	2

G:\PalmerCokingCoal\Col\LandsburgMineWA\99_PROJECTS\923100000002_Ph1_Remediation\R154102_PRODUCTION\INDD\923100_002_R154_003.indd

APPENDIX A

Laboratory Analytical Reports Data Validation and Quality Assurance / Quality Control Review Memorandum and November 2020 Laboratory Analytical Report

TECHNICAL MEMORANDUM

DATE February 19, 2021 **Project No.** 923-1000-006.2020

TO Bill Kombol
Palmer Coking Coal Company

CC Gary Zimmerman, Golder

FROM Joseph Xi (Golder Associates) **EMAIL jxi@golder.com**

LANDSBURG MINE SITE NOVEMBER 2020 DATA VALIDATION & QUALITY ASSURANCE / QUALITY CONTROL REVIEW

This Data Usability Summary Report (DUSR) presents the findings of the data quality assessment performed on the analyses of water samples collected from November 23 to 25, 2020 at the Landsburg Mine Site in Washington (Site) as part of the Landsburg Groundwater sampling project. Samples in the laboratory sample delivery group (SDG) as indicated in Table 1 were reviewed in this DUSR to identify quality issues which could affect the use of the sample data for decision making purposes.

Fourteen water samples, one field duplicate sample, one field blank, and two trip blanks were collected by Golder Associates, Inc. (Golder). Samples were analyzed by Analytical Resources Inc. of Tukwila, Washington for the following parameters:

- Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) USEPA SW-846[1] Method 8260D, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- Northwest Total Petroleum Hydrocarbons – Hydrocarbon Identification Scan by NWTPH-HCID
- 1,4-Dioxane – USEPA Method SW8270E, Semivolatile Organic Compounds by GC/MS

Quality assurance / quality control (QA/QC) reviews of laboratory data were performed in the laboratory in accordance with the laboratory quality assurance program plan (QAPP). The data validation QA/QC review focused primarily on laboratory results and quality control data to ensure that work plan data quality objectives were met for the project.

Data validation was conducted in accordance with the criteria outlined in the National Functional Guidelines for Organic Review (USEPA 2017[2]), modified to include method specific requirements of the laboratory, and

[1] USEPA. 2015. Test methods for evaluating solid waste, physical/chemical methods (SW-846): 3rd edition, and subsequent updates, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm

[2] USEPA. 2017. USEPA Contract Laboratory Program, National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9355.0-136. EPA-540-R-2017—001/002, January. Available on the Web at: https://www.epa.gov/clp/superfund-clp-national-functional-guidelines-data-review (accessed June 26, 2019)

Golder Associates Inc.
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laboratory standard operating procedures. Where there was a discrepancy between the QC criteria in the Guidelines and the QC criterion established in the analytic methodology, method-specific criteria, the QAPP, or professional judgment was used.

In general, chemical results for the samples collected at the Site were evaluated based on laboratory preservation, hold times, laboratory and field blank contamination, outlying precision or accuracy parameters, or based on professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

Data Qualifier Definitions

U The analyte was analyzed for but was not detected.

UJ The result was non-detect but is qualified as estimated due to deficiencies in meeting QC criteria or preservation.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

The validation level for the data is Tier 2A, and included the following:

- Data package completeness assessment
- Verification of required deliverables
- Evaluation of holding times
- Laboratory narrative evaluation
- Evaluation and qualification of QC elements for surrogates, matrix spike samples, laboratory control samples, blanks (method, equipment, and trip blank) laboratory duplicate samples and field duplicate samples
- Evaluation of detection limits

Raw data and calibration elements, including GC instrument tuning and performance check, initial and continuing calibration, internal standard performance, and analyte identification, were not provided by the lab. Data review and validation was performed by an experienced QA personnel independent of the analytical laboratory and not directly involved in the project. Data qualifiers that were applied by the laboratory have been removed from the data summary report sheets, when applicable, and superseded by data validation qualifiers.

Overall, the data review showed that data are acceptable for use, except for 2-chloroethyl vinyl ether for LMW-2-1120. The MS/MSD results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following Guidelines and using professional judgment, the result for 2-chloroethyl vinyl ether for LMW-2-1020 was rejected. 2-chloroethyl vinyl ether was not detected during the November 2020 sampling round and has never been detected at the Site. Other minor data qualifiers related to sample preservation, MS/MSD recoveries below QC criteria, and matrix interference were also reported.

The laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved VOA vials. Due to the acid-labile nature of analytes 2-chloroethyl vinyl ether, acrolein and acrylonitrile, when samples were collected in acid-preserved vials but all associated LCS/LCSDs were within or above QC criteria, the associated non-detect results for these three analytes were qualified as estimated (UJ) due to possible acid degradation. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the November 2020 sampling round and have never been detected at the Site. Qualifier Summary Table (Table 2) is included with the qualifiers applied. For details about the data validation, refer to the data validation checklist in Attachment A. The following bulleted items highlight comments and/or qualifications to specific parameters:

- A data completeness of 99.9% was achieved, which exceeds the QAPP stipulated completeness goal of 90%.

Attachments

Attachment A: Tables
Table 1 – Sample Collection and Analysis Summary
Table 2 – Qualifier Summary Table

Attachment B: Level 2A Data Validation Checklist

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ATTACHMENT A

Tables

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation - November 2020

						Analyses/Parameters		
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs (8260D)**	**1,4-Dioxane (8270E SIM)**	**DRO, GRO, MORO (TPH HCID)**
20K0383	LMW-2-1120	11/23/2020	20K0383-01	WG	MS/MSD	x	x	x
20K0383	LMW-FB-1120	11/23/2020	20K0383-02	WQ	FB	x	x	x
20K0383	LMW-4-1120	11/23/2020	20K0383-03	WG		x	x	x
20K0383	LMW-4-1120-D	11/23/2020	20K0383-04	WG	FD (LMW-4-1120)	x	x	x
20K0383	LMW-10-1120	11/23/2020	20K0383-05	WG		x	x	x
20K0383	LMW-12-1120	11/23/2020	20K0383-06	WG		x	x	x
20K0383	LMW-13R-1120	11/23/2020	20K0383-07	WG		x	x	x
20K0383	TB	11/23/2020	20K0383-08	WQ	TB	x		

Notes:
All analyses performed by Analytical Resources, Incorporated (ARI), Tukwila WA.

Abbreviations:
DRO - Diesel Range Organics
FB - Field Blank
FD - Field Duplicate
GRO - Gasoline Range Organics
MORO - Motor Oil Range Organics
MS/MSD - Matrix Spike/Matrix Spike Duplicate
QC - Quality Control
SDG - Sample Delivery Group
SIM - Selective Ion Monitoring
TB - Trip Blank
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
WG - Groundwater
WQ - Water Quality

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation - November 2020

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
20K0383	All Samples	Acrolein	--	--	--	UJ	Sample Preservation
20K0383	All Samples	Acrylonitrile	--	--	--	UJ	Sample Preservation
20K0383	All Samples except LMW-2-112(	2-Chloroethyl vinyl ether	--	--	--	UJ	Sample Preservation
20K0383	LMW-2-1120	Carbon Disulfide	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	trans-1,2-Dichloroethene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	2,2-Dichloropropane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	cis-1,2-Dichloroethene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Chloroform	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Benzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Trichloroethene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,2-Dichloropropane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Dichlorobromomethane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	cis-1,3-Dichloropropene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Toluene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,1,2-Trichloroethane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,3-Dichloropropane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Tetrachloroethene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Chlorobenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Ethylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,1,1,2-Tetrachloroethane	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	m,p-Xylene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	o-Xylene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Xylenes, total	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Styrene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	n-Propylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Bromobenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	Cumene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	2-Chlorotoluene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	4-Chlorotoluene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	t-Butylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,3,5-Trimethylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,2,4-Trimethylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	p-Isopropyltoluene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,3-Dichlorobenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	1,4-Dichlorobenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	n-Butylbenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation - November 2020

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
20K0383	LMW-2-1120	1,2-Dichlorobenzene	--	--	--	UJ	MS/MSD recovery below QC criteria.
20K0383	LMW-2-1120	2-Chloroethyl vinyl ether	--	--	--	R	MS/MSD did not recover.
--	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers or J-qualifiers are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations

MDL - Method Detection Limit
MS - Matrix Spike
MSD - Matrix Spike Duplicate
QC - Quality Control
RL - Reporting Limit
SDG - Sample Delivery Group

Qualifier Definitions

R - Rejected Result
UJ - Non-Detect Result, RL is estimated

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation - November 2020

						Analyses/Parameters	
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs (8260D)**	**DRO, GRO, MORO (TPH HCID)**
20K0413	LMW-6-1120	11/24/2020	20K0413-01	WG	--	x	x
20K0413	LMW-7-1120	11/24/2020	20K0413-02	WG	--	x	x
20K0413	LMW-3-1120	11/24/2020	20K0413-03	WG	--	x	x
20K0413	LMW-5-1120	11/24/2020	20K0413-04	WG	--	x	x
20K0413	LMW-8-1120	11/24/2020	20K0413-05	WG	--	x	x
20K0413	LMW-9-1120	11/24/2020	20K0413-06	WG	--	x	x
20K0413	LMW-14-1120	11/25/2020	20K0413-07	WG	--	x	x
20K0413	LMW-15-1120	11/25/2020	20K0413-08	WG	--	x	x
20K0413	LMW-11-1120	11/25/2020	20K0413-09	WG	--	x	x
20K0413	TB	11/25/2020	20K0413-10	WQ	TB	x	--

Notes:

All analyses performed by Analytical Resources, Incorporated (ARI), Tukwila WA.

Abbreviations:

DRO - Diesel Range Organics
FB - Field Blank
FD - Field Duplicate
GRO - Gasoline Range Organics
MORO - Motor Oil Range Organics
MS/MSD - Matrix Spike/Matrix Spike Duplicate
QC - Quality Control
SDG - Sample Delivery Group
SIM - Selected Ion Monitoring
TB - Trip Blank
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds
WG - Groundwater
WQ - Water Quality

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation - November 2020

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
20K0413	All Samples	Acrolein	--	--	--	UJ	Sample Preservation
20K0413	All Samples	Acrylonitrile	--	--	--	UJ	Sample Preservation
20K0413	All Samples	2-Chloroethyl vinyl ether	--	--	--	UJ	Sample Preservation
--	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers or J-qualifiers are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations

MDL - Method Detection Limit
QC - Quality Control
RL - Reporting Limit
SDG - Sample Delivery Group

Qualifier Definitions

UJ - Non-Detect Result, RL is estimated

ATTACHMENT B

Level 2A Data Validation Checklist

Project Name: Landsburg Groundwater
Project Number/Phase/Task: 9231000006 p2020
Reviewing Company: Golder Associates
Project Manager: Gary Zimmerman
Data Evaluator: Rachel Brasco
Data Evaluation Date: January 8, 2021
Checked by: Michael Shadle
Review Date: January 12, 2021
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 20K0383

Matrix: ☒ Aqueous ☐ Soil ☐ Sediment ☐ Waste ☐ Air ☐ Other:

Analytical Methods: See Table 1.

Sample Information: See Table 1.

Work Plan or QAPP: Compliance Monitoring Plan and QAPP for Landsburg Mine Site (Exhibit D, to the Consent Decree, 2017).

Data Validation Guidance: National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-2017-002, January 2017.

COC and Sample Receipt	**YES**	**NO**	**NA**	**COMMENT**
a) COC complete and correct?	☒	☐		
b) COC documents release of custody (signed and dated)?	☒	☐		
c) Field QC types provided (note types)?	☒	☐	☐	FD, MS/MSD, TB, and FB; See Table 1
d) Did the cooler contents match the COC?	☒	☐		
e) Were samples received in good condition?	☒	☐		
f) Were cooler temperatures within control limits?	☒	☐		

Data Package Information	**YES**	**NO**	**NA**	**COMMENT**
a) Laboratory name and location documented?	☒	☐		
b) All samples on COC reported in data package?	☒	☐		
c) Requested analytical methods used?	☒	☐		
d) Requested sample preparation methods used?	☒	☐	☐	
e) Requested analyte list reported?	☒	☐		
f) Requested units reported?	☒	☐	☐	
g) Did the laboratory define the qualifiers used?	☒	☐		
h) Data package contains all information necessary to complete the data quality review?	☒	☐		All Information for a 2A Scope

Analytical Assessment	**YES**	**NO**	**NA**	**COMMENT**
a) Solid samples reported on a dry-weight basis?	☐	☐	☒	
b) Were solid samples percent moisture criteria acceptable?	☐	☐	☒	
c) Were sample dilutions noted?	☐	☒		
d) Were detected concentrations less than the QL qualified by the laboratory?	☒	☐		No Results Less than QL
e) Were detected concentrations above the calibration range reported by the laboratory?	☐	☒		
f) Did the laboratory satisfy the requested sensitivity requirements?	☒	☐		

Laboratory Case Narrative	**YES**	**NO**	**NA**	**COMMENT**
a) Do the laboratory narrative or laboratory qualifiers indicate deficiencies?	☒	☐	☐	See Notes Below
b) Were all deficiencies noted in the laboratory qualifiers or narrative?	☒	☐	☐	

Sample Preservation and Holding Time	**YES**	**NO**	**NA**	**COMMENT**
a) Were samples properly preserved?	☒	☐		See Note 1
b) Were holding times met for sample preparation?	☒	☐	☐	
c) Were holding times met for sample analysis?	☒	☐		For primary samples

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were blanks analyzed at the appropriate frequency?	☒	☐		
b) Were any analytes detected in the associated preparation/method blank?	☐	☒		
c) Were any analytes detected in the associated trip blanks?	☐	☒	☐	
d) Were any analytes detected in the associated field or equipment/rinsate blanks?	☐	☒	☐	
e) Were any analytes detected in the associated storage blanks?	☐	☐	☒	

Surrogates or Deuterated Monitoring Compounds	**YES**	**NO**	**NA**	**COMMENTS**
a) Were the correct surrogate compounds added to each sample?	☒	☐	☐	
b) Were surrogate recoveries within control limits?	☒	☐	☐	
c) If not, were samples analyzed at dilution factors of 20x or greater?	☐	☐	☒	

LCS/LCSD	**YES**	**NO**	**NA**	**COMMENTS**
a) Were LCS/LCSD reported at the appropriate frequency?	☒	☐		
b) Were proper analytes included in the LCS/LCSD?	☒	☐		
c) Were LCS/LCSD recoveries within control limits?	☒	☐		
d) Were RPD values within control limits (if LCSD was analyzed)?	☒	☐	☐	

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific MS (and MSD) reported?	☒	☐		LMW-2-1120
b) Were proper analytes reported in the MS/MSD?	☒	☐	☐	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☒	☐	See Note 2
d) If not, were sample concentrations greater than 4x the spiking concentration?	☐	☒	☐	
e) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	☒	☐	☐	

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
f) Were project-specific post-digestion spikes analyzed?	☐	☒	☐	
g) Were project-specific post-digestion spike recoveries within control limits?	☐	☐	☒	

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific laboratory duplicates reported?	☐	☒	☐	
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	☐	☐	☒	
c) Were field duplicates reported?	☒	☐	☐	LMW-4-1120/ LMW-4-1120-D
d) Was field duplicate RPD or absolute difference criteria acceptable?	☒	☐	☐	

ICP Serial Dilution (SD)	**YES**	**NO**	**NA**	**COMMENTS**
a) Was project-specific ICP SD data provided?	☐	☐	☒	
b) Were project-specific ICP SD within acceptable criteria?	☐	☐	☒	

Overall Evaluation	**YES**	**NO**	**NA**	**COMMENTS**
a) Were there any other technical problems not previously addressed?	☒	☐		See Note 3
b) Were data acceptable and usable, except where noted?	☒	☐		

Comments/Notes:

1. All VOC samples were preserved with HCl in accordance to the method requirement to a pH value less than 2. The laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved VOA vials. Due to the acid-labile nature of 2-chloroethyl vinyl ether, acrolein and acrylonitrile, it is recommended that those analytes are collected in and analyzed from unpreserved vials. Based on professional judgment, when samples were outside of method and preservation requirements but all associated LCS/LCSDs were within or above QC criteria, the associated non-detect results for these three analytes were qualified as estimated (UJ) due to possible acid degradation.

2. MS/MSD recoveries were outside of acceptance criteria for select analytes, as summarized in the table below for project specific samples. Using professional judgment, when only one QC indicator (MS/MSD/RPD) did not meet QC criteria, qualification was not required. When the MS/MSD recoveries were below QC criteria, associated non-detect results were qualified as estimated (UJ).

   The MS/MSD results for 2-chloroethyl vinyl were non-detect and the lab did not calculate both the recoveries and RPD. Samples were collected in preserved VOA vials and the recovery was most likely lost due to the acid-labile nature of 2-chloroethyl vinyl ether. Following Guidelines and using professional judgment, when the MS/MSD results were ND and the calculated percent recovery of the associated MS/MSD did not recover (NR), the associated non-detect results were rejected (R).

Primary Sample Name	Parameter	Analyte	MS/MSD % Recovery	RPD	% Recovery / RPD Criteria
LMW-2-1120	8260D	Carbon Disulfide	**74.6 / 74.4**	0.29	78 – 125 / 30
LMW-2-1120	8260D	trans-1,2-Dichloroethene	**74.3 / 75**	0.95	78 – 128 / 30
LMW-2-1120	8260D	1,1-Dichloroethane	76.2 **/ 74.5**	2.22	76 – 124 / 30
LMW-2-1120	8260D	2,2-Dichloropropane	**64.4** / **61.6**	4.47	66 – 147 / 30

Primary Sample Name	Parameter	Analyte	MS/MSD % Recovery	RPD	% Recovery / RPD Criteria
LMW-2-1120	8260D	cis-1,2-Dichloroethene	**71.8** / **70.2**	2.23	80 – 121 / 30
LMW-2-1120	8260D	Chloroform	**76.1** / **72.9**	4.32	80 – 122 / 30
LMW-2-1120	8260D	Bromochloromethane	**75.6** / 73.8	2.40	80 – 121 / 30
LMW-2-1120	8260D	1,1-Dichloropropene	**76.9** / 72.5	2.20	80 – 127 / 30
LMW-2-1120	8260D	Benzene	**72.7** / **71.2**	2.17	80 – 120 / 30
LMW-2-1120	8260D	Trichloroethene	**74.9** / **71.7**	4.34	80 – 120 / 30
LMW-2-1120	8260D	1,2-Dichloropropane	**72.5** / **69.3**	4.42	80 – 120 / 30
LMW-2-1120	8260D	Bromodichloromethane	**70.7** / **68.5**	3.14	80 – 121 / 30
LMW-2-1120	8260D	Dibromomethane	82.6 / **78.1**	5.61	80 – 120 / 30
LMW-2-1120	8260D	cis-1,3-Dichloropropene	**68.1** / **67.2**	1.37	80 – 124 / 30
LMW-2-1120	8260D	Toluene	**73.6** / **72.3**	1.81	80 – 120 / 30
LMW-2-1120	8260D	trans-1,3-Dichloropropene	73.1 **/ 69.7**	4.73	71 – 127 / 30
LMW-2-1120	8260D	1,1,2-Trichloroethane	**79.8** / **76.2**	4.60	80 – 121 / 30
LMW-2-1120	8260D	1,3-Dichloropropane	**77.2** / **75.2**	2.62	80 – 120 / 30
LMW-2-1120	8260D	Tetrachloroethene	**76.2** / **74.1**	2.78	80 – 120 / 30
LMW-2-1120	8260D	Chlorobenzene	**71.1** / **70**	1.62	80 – 120 / 30
LMW-2-1120	8260D	Ethylbenzene	**71.1** / **71.7**	0.76	80 – 120 / 30
LMW-2-1120	8260D	1,1,1,2-Tetrachloroethane	**73.8** / **70.9**	4.01	80 – 120 / 30
LMW-2-1120	8260D	m,p-Xylene	**73.2** / **72.3**	1.17	80 – 121 / 30
LMW-2-1120	8260D	o-Xylene	**71.3** / **69.1**	3.13	80 – 121 / 30
LMW-2-1120	8260D	Xylenes, total	**72.5** / **71.2**	1.81	76 – 127 / 30
LMW-2-1120	8260D	Styrene	**70.5** / **68.9**	2.28	80 – 124 / 30
LMW-2-1120	8260D	trans-1,4-Dichloro 2-Butene	57.6 / **49**	16	55 – 129 / 30
LMW-2-1120	8260D	n-Propylbenzene	**74.6** / **72.5**	2.81	78 – 130 / 30
LMW-2-1120	8260D	Bromobenzene	**72.4** / **69.3**	4.44	80 – 120 / 30
LMW-2-1120	8260D	Isopropyl Benzene	**74.8** / **72.6**	3.03	80 – 128 / 30
LMW-2-1120	8260D	2-Chlorotoluene	**71** / **69.5**	2.12	78 – 122 / 30
LMW-2-1120	8260D	4-Chlorotoluene	**71.4** / **70.9**	0.69	80 – 121 / 30
LMW-2-1120	8260D	t-Butylbenzene	**76.1** / **74.1**	2.71	78 – 125 / 30
LMW-2-1120	8260D	1,3,5-Trimethylbenzene	**73.3** / **71.4**	2.67	80 – 129 / 30
LMW-2-1120	8260D	1,2,4-Trimethylbenzene	**72.3** / **69.9**	3.83	80 – 127 / 30
LMW-2-1120	8260D	s-Butylbenzene	78.2 **/ 76.2**	2.58	78 – 129 / 30
LMW-2-1120	8260D	4-Isopropyl Toluene	**75.2** / **72.9**	3.10	79 – 130 / 30
LMW-2-1120	8260D	1,3-Dichlorobenzene	**70.8** / **70**	1.11	80 – 120 / 30
LMW-2-1120	8260D	1,4-Dichlorobenzene	**72.7** / **69.7**	4.26	80 – 120 / 30
LMW-2-1120	8260D	n-Butylbenzene	**73.1** / **72.8**	0.45	74 – 129 / 30
LMW-2-1120	8260D	1,2-Dichlorobenzene	**72.2** / **69.8**	3.43	80 – 120 / 30
LMW-2-1120	8260D	2-Chloroethyl Vinyl Ether	NR / NR	--	64 – 116 / --

3. The laboratory case narrative noted that certain CCVs and ICVs were outside of control criteria for select analytes in the VOC analysis and marked with the “Q” qualifier. Review of calibration data is outside of the scope of a Level IIA validation, and the calibration results were not included in the data package. There is no other action but to note.

Data qualification: See Table 2.

Definitions:

%D:	Percent Difference / Drift
%R:	Percent Recovery
CCB:	Continuing Calibration Blank
CCV:	Continuing Calibration Verification
COC:	Chain of Custody
CRQL:	Contract Required Quantitation Limit
DMC:	Deuterated Monitoring Compound
DRO:	Diesel Range Organics
EB:	Equipment Blank
FB:	Field Blank
GRO:	Gasoline Range Organics
HT:	Holding Time
ICB:	Initial Calibration Blank
ICV:	Initial Calibration Verification
IS:	Internal Standard
LCS:	Laboratory Control Sample
LCSD:	Laboratory Control Sample Duplicate
MB:	Method Blank
MDL:	Method Detection Limit
MS:	Matrix Spike
MSD:	Matrix Spike Duplicate
PCB:	Polychlorinated Biphenyl
PQL:	Practical Quantitation Limit
QAPP:	Quality Assurance Project Plan
QC:	Quality Control
QL:	Quantitation Limit
RB:	Rinsate Blank
RDL:	Reported Detection Limit
RL:	Reporting Limit
RPD:	Relative Percent Deviation
RRF:	Relative Response Factor
RSD:	Relative Standard Deviation
SD:	Serial Dilution
SDG:	Sample Delivery Group
SPLP:	Synthetic Precipitate Leachate Procedure
SVOC:	Semivolatile Organic Compound
TAL:	Target Analyte List
TAT:	Turn Around Time
TB:	Trip Blank
TCL:	Target Compound List
TCLP:	Toxicity Characteristic Leachate Procedure
TDS:	Total Dissolved Solids
TOC:	Total Organic Carbon
TPH:	Total Petroleum Hydrocarbons
TSS:	Total Suspended Solids
VOC:	Volatile Organic Compound
ZHE:	Zero Headspace Extraction

Project Name: Landsburg Groundwater
Project Number/Phase/Task: 9231000006 p2020
Reviewing Company: Golder Associates
Project Manager: Gary Zimmerman
Data Evaluator: Rachel Brasco
Data Evaluation Date: January 12, 2021
Checked by: Michael Shadle
Review Date: January 13, 2021
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 20K0413

Matrix: ☒ Aqueous ☐ Soil ☐ Sediment ☐ Waste ☐ Air ☐ Other:

Analytical Methods: See Table 1.

Sample Information: See Table 1.

Work Plan or QAPP: Compliance Monitoring Plan and QAPP for Landsburg Mine Site (Exhibit D, to the Consent Decree, 2017).

Data Validation Guidance: National Functional Guidelines for Organic Superfund Methods Data Review, EPA-540-R-2017-002, January 2017.

COC and Sample Receipt	**YES**	**NO**	**NA**	**COMMENT**
a) COC complete and correct?	☒	☐		
b) COC documents release of custody (signed and dated)?	☒	☐		
c) Field QC types provided (note types)?	☒	☐	☐	TB; See Table 1
d) Did the cooler contents match the COC?	☒	☐		
e) Were samples received in good condition?	☒	☐		
f) Were cooler temperatures within control limits?	☒	☐		

Data Package Information	**YES**	**NO**	**NA**	**COMMENT**
a) Laboratory name and location documented?	☒	☐		
b) All samples on COC reported in data package?	☒	☐		
c) Requested analytical methods used?	☒	☐		
d) Requested sample preparation methods used?	☒	☐	☐	
e) Requested analyte list reported?	☒	☐		
f) Requested units reported?	☒	☐	☐	
g) Did the laboratory define the qualifiers used?	☒	☐		
h) Data package contains all information necessary to complete the data quality review?	☒	☐		All Information for a 2A Scope

Analytical Assessment	**YES**	**NO**	**NA**	**COMMENT**
a) Solid samples reported on a dry-weight basis?	☐	☐	☒	
b) Were solid samples percent moisture criteria acceptable?	☐	☐	☒	
c) Were sample dilutions noted?	☐	☒		
d) Were detected concentrations less than the QL qualified by the laboratory?	☒	☐		No Results Less than QL
e) Were detected concentrations above the calibration range reported by the laboratory?	☐	☒		
f) Did the laboratory satisfy the requested sensitivity requirements?	☒	☐		

Laboratory Case Narrative	**YES**	**NO**	**NA**	**COMMENT**
a) Do the laboratory narrative or laboratory qualifiers indicate deficiencies?	☐	☒	☐	
b) Were all deficiencies noted in the laboratory qualifiers or narrative?	☐	☐	☒	

Sample Preservation and Holding Time	**YES**	**NO**	**NA**	**COMMENT**
a) Were samples properly preserved?	☒	☐		See Note 1
b) Were holding times met for sample preparation?	☒	☐	☐	
c) Were holding times met for sample analysis?	☒	☐		

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were blanks analyzed at the appropriate frequency?	☒	☐		
b) Were any analytes detected in the associated preparation/method blank?	☐	☒		
c) Were any analytes detected in the associated trip blanks?	☐	☒	☐	
d) Were any analytes detected in the associated field or equipment/rinsate blanks?	☐	☐	☒	
e) Were any analytes detected in the associated storage blanks?	☐	☐	☒	

Surrogates or Deuterated Monitoring Compounds	**YES**	**NO**	**NA**	**COMMENTS**
a) Were the correct surrogate compounds added to each sample?	☒	☐	☐	
b) Were surrogate recoveries within control limits?	☒	☐	☐	
c) If not, were samples analyzed at dilution factors of 20x or greater?	☐	☐	☒	

LCS/LCSD	**YES**	**NO**	**NA**	**COMMENTS**
a) Were LCS/LCSD reported at the appropriate frequency?	☒	☐		
b) Were proper analytes included in the LCS/LCSD?	☒	☐		
c) Were LCS/LCSD recoveries within control limits?	☒	☐		
d) Were RPD values within control limits (if LCSD was analyzed)?	☒	☐	☐	

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific MS (and MSD) reported?	☐	☒		
b) Were proper analytes reported in the MS/MSD?	☐	☐	☒	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☐	☒	
d) If not, were sample concentrations greater than 4x the spiking concentration?	☐	☐	☒	
e) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	☐	☐	☒	

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
f) Were project-specific post-digestion spikes analyzed?	☐	☐	☒	
g) Were project-specific post-digestion spike recoveries within control limits?	☐	☐	☒	

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were project-specific laboratory duplicates reported?	☐	☒	☐	
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	☐	☐	☒	
c) Were field duplicates reported?	☐	☒	☐	
d) Was field duplicate RPD or absolute difference criteria acceptable?	☐	☐	☒	

ICP Serial Dilution (SD)	**YES**	**NO**	**NA**	**COMMENTS**
a) Was project-specific ICP SD data provided?	☐	☐	☒	
b) Were project-specific ICP SD within acceptable criteria?	☐	☐	☒	

Overall Evaluation	**YES**	**NO**	**NA**	**COMMENTS**
a) Were there any other technical problems not previously addressed?	☐	☒		
b) Were data acceptable and usable, except where noted?	☒	☐		

Comments/Notes:

1. All VOC samples were preserved with HCl in accordance with the method requirement to a pH value less than 2. The laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved VOA vials. Due to the acid-labile nature of 2-chloroethyl vinyl ether, acrolein and acrylonitrile, it is recommended that those analytes are collected in and analyzed from unpreserved vials. Based on professional judgment, when samples were outside of method and preservation requirements but all associated LCS/LCSDs were within or above QC criteria, the associated non-detect results for these three analytes were qualified as estimated (UJ) due to possible acid degradation.

Data qualification: See Table 2.

Definitions:

%D:	Percent Difference / Drift
%R:	Percent Recovery
CCB:	Continuing Calibration Blank
CCV:	Continuing Calibration Verification
COC:	Chain of Custody
CRQL:	Contract Required Quantitation Limit
DMC:	Deuterated Monitoring Compound
DRO:	Diesel Range Organics
EB:	Equipment Blank
FB:	Field Blank
GRO:	Gasoline Range Organics
HT:	Holding Time
ICB:	Initial Calibration Blank
ICV:	Initial Calibration Verification
IS:	Internal Standard
LCS:	Laboratory Control Sample
LCSD:	Laboratory Control Sample Duplicate
MB:	Method Blank
MDL:	Method Detection Limit
MS:	Matrix Spike
MSD:	Matrix Spike Duplicate
PCB:	Polychlorinated Biphenyl
PQL:	Practical Quantitation Limit
QAPP:	Quality Assurance Project Plan
QC:	Quality Control
QL:	Quantitation Limit
RB:	Rinsate Blank
RDL:	Reported Detection Limit
RL:	Reporting Limit
RPD:	Relative Percent Deviation
RRF:	Relative Response Factor
RSD:	Relative Standard Deviation
SD:	Serial Dilution
SDG:	Sample Delivery Group
SPLP:	Synthetic Precipitate Leachate Procedure
SVOC:	Semivolatile Organic Compound
TAL:	Target Analyte List
TAT:	Turn Around Time
TB:	Trip Blank
TCL:	Target Compound List
TCLP:	Toxicity Characteristic Leachate Procedure
TDS:	Total Dissolved Solids
TOC:	Total Organic Carbon
TPH:	Total Petroleum Hydrocarbons
TSS:	Total Suspended Solids
VOC:	Volatile Organic Compound
ZHE:	Zero Headspace Extraction

Analytical Resources, Incorporated
Analytical Chemists and Consultants

14 December 2020

Gary Zimmerman
Golder Associates
18300 NE Union Hill Road Suite 200
Redmond, WA 98052-3333

RE: Landsburg

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20K0383	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20K0383	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: GOLDER	Phone:	Date: 11/23/20	Ice Present?
Client Contact: GARY ZIMMERMAN/JOSEPH XI		No. of Coolers: 2	Cooler Temps: 3.8/4.4
Client Project Name: LANDSBURG GW			
Client Project #: 923100000620 20	Samplers: T. HASKINS/C. KUBICKI		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs CLIENT LIST	TPH HCID (Field Extracted)	1,4-DIOXANE						Notes/Comments
LMW-2-1120	11/23/20	0930	GW	33	X	X	X						+MS/MSD
LMW-FB-1120		1000	DI	11	X	X	X						
LMW-4-1120		1050	GW	11	X	X	X						
LMW-4-1120-D		1055	GW	11	X	X	X						
LMW-10-1120		1210	GW	11	X	X	X						
LMW-12-1120		1355	GW	11	X	X	X						
LMW-13R-1120		1440	GW	11	X	X	X						
TB	-	-	DI	3	X								

ANALYZE IN ACCORDANCE WITH MSA BETWEEN GOLDER AND ARI

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
-ECOLOGY EIM EDD - CLIENT SPECIFIC RLs/ ANALYTE LIST	Printed Name: THOMAS HASKINS	Printed Name: Samantha Colon	Printed Name:	Printed Name:
	Company: GOLDER	Company: ARI	Company:	Company:
	Date & Time: 11/23/20 1603	Date & Time: 11/23/2020 1603	Date & Time:	Date & Time:

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-2-1120	20K0383-01	Water	23-Nov-2020 09:30	23-Nov-2020 16:03
LMW-FB-1120	20K0383-02	Water	23-Nov-2020 10:00	23-Nov-2020 16:03
LMW-4-1120	20K0383-03	Water	23-Nov-2020 10:50	23-Nov-2020 16:03
LMW-4-1120-D	20K0383-04	Water	23-Nov-2020 10:55	23-Nov-2020 16:03
LMW-10-1120	20K0383-05	Water	23-Nov-2020 12:10	23-Nov-2020 16:03
LMW-12-1120	20K0383-06	Water	23-Nov-2020 13:55	23-Nov-2020 16:03
LMW-13R-1120	20K0383-07	Water	23-Nov-2020 14:40	23-Nov-2020 16:03
TB	20K0383-08	Water	23-Nov-2020 09:30	23-Nov-2020 16:03

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Work Order Case Narrative

Hydrocarbon Identification (HCID) - WA-Ecology Method NW-HCID

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS) percent recoveries were within control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times with the exception of all associated "Q" flagged analytes which are out of control
low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits with the exception of analytes
flagged on the associated forms.

1,4-Dioxane- EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

Project Name: Landburg GW

COC No(s): ~~NA~~

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20K0383

Tracking No: ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1603 — 3.8 4.4 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 5206

Cooler Accepted by: SC Date: 11/23/2020 Time: 1603

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	11/16/2020	

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 11/24/2020 Time: 1335 Labels checked by: JS

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-2-1120

20K0383-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:40

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-01 AD

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-2-1120

20K0383-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:40

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-2-1120

20K0383-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:40

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-2-1120

20K0383-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 09:30
Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 17:27

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-01 B 01
Preparation Batch: BIK0841 — Sample Size: 500 mL
Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.3	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*82.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-2-1120

20K0383-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 09:30
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 17:54

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-01 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*80.9*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-FB-1120

20K0383-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:00

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:01

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-02 J

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-FB-1120

20K0383-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:00

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-FB-1120

20K0383-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:00

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:01

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*99.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-FB-1120

20K0383-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 10:00

Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 18:42

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-02 B 01

Preparation Batch: BIK0841 — Sample Size: 500 mL

Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*88.1*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-FB-1120

20K0383-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 10:00

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 18:16

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-02 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*91.5*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*70.8*	*%*	

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120

20K0383-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:50
Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:21

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-03 J
Preparation Batch: BIL0047 — Sample Size: 10 mL
Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120

20K0383-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:50

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:21

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*110*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120

20K0383-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:50

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:21

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.8*	*%*	

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120

20K0383-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 10:50
Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 19:07

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-03 B 01
Preparation Batch: BIK0841 — Sample Size: 500 mL
Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.3	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*76.7*	*%*	

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120

20K0383-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 10:50
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 18:38

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-03 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*95.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*73.9*	*%*	

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120-D

20K0383-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-04 K

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120-D

20K0383-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:42

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*112*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120-D

20K0383-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 10:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 11:42

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.7*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120-D

20K0383-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 10:55

Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 19:32

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-04 B 01

Preparation Batch: BIK0841 — Sample Size: 500 mL

Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.4	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*82.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-4-1120-D

20K0383-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 10:55

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 19:01

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-04 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*88.0*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*65.7*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-10-1120

20K0383-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 12:10

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:03

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-05 J

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-10-1120

20K0383-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 12:10

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*109*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-10-1120

20K0383-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 12:10

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:03

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.7*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-10-1120

20K0383-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 12:10

Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 19:57

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-05 B 01

Preparation Batch: BIK0841 — Sample Size: 500 mL

Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*88.2*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-10-1120

20K0383-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 12:10

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 19:23

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-05 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*97.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*76.3*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-12-1120

20K0383-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 13:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:23

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-06 J

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-12-1120

20K0383-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 13:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*110*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-12-1120

20K0383-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 13:55

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:23

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-12-1120

20K0383-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 13:55

Instrument: NT6 Analyst: JZ — Analyzed: 12/12/2020 20:22

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-06 B 01

Preparation Batch: BIK0841 — Sample Size: 500 mL

Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*79.5*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-12-1120

20K0383-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 13:55

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 19:45

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-06 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*76.5*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*58.0*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-13R-1120

20K0383-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:44

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-07 G

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-13R-1120

20K0383-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:44

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-13R-1120

20K0383-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 12:44

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-13R-1120

20K0383-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 11/23/2020 14:40

Instrument: NT6 Analyst: JZ — Analyzed: 12/14/2020 12:01

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 20K0383-07 B 01

Preparation Batch: BIK0841 — Sample Size: 500 mL

Prepared: 11/29/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	ND	ug/L	U
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*76.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

LMW-13R-1120

20K0383-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/23/2020 14:40

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 20:07

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0383-07 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*93.5*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*71.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

TB

20K0383-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 09:59

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0383-08 A

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

TB

20K0383-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 09:59

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

TB

20K0383-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/23/2020 09:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 09:59

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*95.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)			Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.10	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.10	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	2.50	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59						
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.94		ug/L	*5.00*		*98.7*	*80-129*			
Surrogate: Toluene-d8	4.99		ug/L	*5.00*		*99.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.82		ug/L	*5.00*		*96.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.06		ug/L	*5.00*		*101*	*80-120*			
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 07:37						
Chloromethane	9.32	0.50	ug/L	10.0		93.2	60-138			
Vinyl Chloride	10.2	0.10	ug/L	10.0		102	66-133			
Bromomethane	10.2	1.00	ug/L	10.0		102	72-131			
Chloroethane	10.3	0.20	ug/L	10.0		103	60-155			
Trichlorofluoromethane	8.96	0.20	ug/L	10.0		89.6	62-141			
Acrolein	48.2	5.00	ug/L	50.0		96.4	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.9	0.20	ug/L	10.0		109	76-129			
Acetone	46.0	5.00	ug/L	50.0		92.1	58-142			
1,1-Dichloroethene	9.91	0.20	ug/L	10.0		99.1	69-135			
Iodomethane	10.1	1.00	ug/L	10.0		101	56-147			
Methylene Chloride	9.66	1.00	ug/L	10.0		96.6	65-135			
Acrylonitrile	9.13	1.00	ug/L	10.0		91.3	64-134			
Carbon Disulfide	9.97	0.20	ug/L	10.0		99.7	78-125			
trans-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	78-128			
Vinyl Acetate	9.63	0.20	ug/L	10.0		96.3	55-138			
1,1-Dichloroethane	10.0	0.20	ug/L	10.0		100	76-124			
2-Butanone	47.9	5.00	ug/L	50.0		95.8	61-140			
2,2-Dichloropropane	10.0	0.20	ug/L	10.0		100	66-147			
cis-1,2-Dichloroethene	9.80	0.20	ug/L	10.0		98.0	80-121			
Chloroform	9.82	0.20	ug/L	10.0		98.2	80-122			
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121			
1,1,1-Trichloroethane	10.2	0.20	ug/L	10.0		102	79-123			
1,1-Dichloropropene	10.0	0.10	ug/L	10.0		100	80-127			
Carbon tetrachloride	10.2	0.20	ug/L	10.0		102	53-137			
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101	75-123			
Benzene	10.0	0.20	ug/L	10.0		100	80-120			
Trichloroethene	10.2	0.20	ug/L	10.0		102	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020	Analyzed: 02-Dec-2020 07:37					
1,2-Dichloropropane	9.99	0.20	ug/L	10.0		99.9	80-120			
Bromodichloromethane	9.86	0.20	ug/L	10.0		98.6	80-121			
Dibromomethane	10.2	0.20	ug/L	10.0		102	80-120			
2-Chloroethyl vinyl ether	9.46	1.00	ug/L	10.0		94.6	64-116			
4-Methyl-2-Pentanone	50.1	2.50	ug/L	50.0		100	67-133			
cis-1,3-Dichloropropene	10.3	0.20	ug/L	10.0		103	80-124			
Toluene	10.1	0.20	ug/L	10.0		101	80-120			
trans-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104	71-127			
2-Hexanone	48.7	5.00	ug/L	50.0		97.4	69-133			
1,1,2-Trichloroethane	10.0	0.20	ug/L	10.0		100	80-121			
1,3-Dichloropropane	10.1	0.10	ug/L	10.0		101	80-120			
Tetrachloroethene	10.4	0.20	ug/L	10.0		104	80-120			
Dibromochloromethane	10.5	0.20	ug/L	10.0		105	65-135			
1,2-Dibromoethane	10.5	0.10	ug/L	10.0		105	80-121			
Chlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Ethylbenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	20.7	0.40	ug/L	20.0		103	80-121			
o-Xylene	10.1	0.20	ug/L	10.0		101	80-121			
Xylenes, total	30.8	0.60	ug/L	30.0		103	76-127			
Styrene	10.2	0.20	ug/L	10.0		102	80-124			
Bromoform	9.02	0.20	ug/L	10.0		90.2	51-134			
1,1,2,2-Tetrachloroethane	9.69	0.20	ug/L	10.0		96.9	77-123			
1,2,3-Trichloropropane	10.2	0.25	ug/L	10.0		102	76-125			
trans-1,4-Dichloro 2-Butene	8.80	1.00	ug/L	10.0		88.0	55-129			
n-Propylbenzene	10.3	0.20	ug/L	10.0		103	78-130			
Bromobenzene	10.2	0.20	ug/L	10.0		102	80-120			
Isopropyl Benzene	10.3	0.20	ug/L	10.0		103	80-128			
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122			
4-Chlorotoluene	10.0	0.20	ug/L	10.0		100	80-121			
t-Butylbenzene	10.3	0.20	ug/L	10.0		103	78-125			
1,3,5-Trimethylbenzene	10.3	0.20	ug/L	10.0		103	80-129			
1,2,4-Trimethylbenzene	10.3	0.20	ug/L	10.0		103	80-127			
s-Butylbenzene	10.4	0.20	ug/L	10.0		104	78-129			
4-Isopropyl Toluene	10.2	0.20	ug/L	10.0		102	79-130			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 07:37						
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
n-Butylbenzene	10.3	0.20	ug/L	10.0		103	74-129			
1,2-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dibromo-3-chloropropane	8.95	0.50	ug/L	10.0		89.5	62-123			
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0		102	64-124			
Hexachloro-1,3-Butadiene	9.64	0.50	ug/L	10.0		96.4	58-123			
Naphthalene	9.97	0.50	ug/L	10.0		99.7	50-134			
1,2,3-Trichlorobenzene	9.85	0.50	ug/L	10.0		98.5	49-133			
Dichlorodifluoromethane	10.5	0.20	ug/L	10.0		105	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.08		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.95		ug/L	*5.00*		*99.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.08		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.10		ug/L	*5.00*		*102*	*80-120*			
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Chloromethane	9.84	0.50	ug/L	10.0		98.4	60-138	5.47	30	
Vinyl Chloride	10.5	0.10	ug/L	10.0		105	66-133	2.87	30	
Bromomethane	10.8	1.00	ug/L	10.0		108	72-131	5.16	30	
Chloroethane	10.5	0.20	ug/L	10.0		105	60-155	2.04	30	
Trichlorofluoromethane	10.1	0.20	ug/L	10.0		101	62-141	12.40	30	
Acrolein	52.9	5.00	ug/L	50.0		106	52-190	9.20	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129	2.00	30	
Acetone	47.4	5.00	ug/L	50.0		94.7	58-142	2.82	30	
1,1-Dichloroethene	10.3	0.20	ug/L	10.0		103	69-135	4.33	30	
Iodomethane	10.5	1.00	ug/L	10.0		105	56-147	4.11	30	
Methylene Chloride	10.2	1.00	ug/L	10.0		102	65-135	5.67	30	
Acrylonitrile	9.48	1.00	ug/L	10.0		94.8	64-134	3.78	30	
Carbon Disulfide	10.2	0.20	ug/L	10.0		102	78-125	1.83	30	
trans-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	78-128	4.14	30	
Vinyl Acetate	9.82	0.20	ug/L	10.0		98.2	55-138	1.96	30	
1,1-Dichloroethane	10.4	0.20	ug/L	10.0		104	76-124	3.65	30	
2-Butanone	50.4	5.00	ug/L	50.0		101	61-140	5.13	30	
2,2-Dichloropropane	10.0	0.20	ug/L	10.0		100	66-147	0.12	30	
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	80-121	3.83	30	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Chloroform	10.2	0.20	ug/L	10.0		102	80-122	3.74	30	
Bromochloromethane	10.3	0.20	ug/L	10.0		103	80-121	0.43	30	
1,1,1-Trichloroethane	10.5	0.20	ug/L	10.0		105	79-123	3.21	30	
1,1-Dichloropropene	10.3	0.10	ug/L	10.0		103	80-127	2.66	30	
Carbon tetrachloride	10.5	0.20	ug/L	10.0		105	53-137	3.15	30	
1,2-Dichloroethane	10.6	0.20	ug/L	10.0		106	75-123	4.52	30	
Benzene	10.4	0.20	ug/L	10.0		104	80-120	4.26	30	
Trichloroethene	10.6	0.20	ug/L	10.0		106	80-120	3.86	30	
1,2-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120	5.13	30	
Bromodichloromethane	9.86	0.20	ug/L	10.0		98.6	80-121	0.00		
Dibromomethane	10.8	0.20	ug/L	10.0		108	80-120	5.14	30	
2-Chloroethyl vinyl ether	10.2	1.00	ug/L	10.0		102	64-116	7.52	30	
4-Methyl-2-Pentanone	52.9	2.50	ug/L	50.0		106	67-133	5.41	30	
cis-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	80-124	4.25	30	
Toluene	10.5	0.20	ug/L	10.0		105	80-120	4.19	30	
trans-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	71-127	4.32	30	
2-Hexanone	51.0	5.00	ug/L	50.0		102	69-133	4.69	30	
1,1,2-Trichloroethane	10.6	0.20	ug/L	10.0		106	80-121	4.90	30	
1,3-Dichloropropane	10.3	0.10	ug/L	10.0		103	80-120	2.00	30	
Tetrachloroethene	10.6	0.20	ug/L	10.0		106	80-120	1.63	30	
Dibromochloromethane	10.8	0.20	ug/L	10.0		108	65-135	3.28	30	
1,2-Dibromoethane	10.8	0.10	ug/L	10.0		108	80-121	3.23	30	
Chlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	2.90	30	
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120	2.71	30	
1,1,1,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	80-120	2.31	30	
m,p-Xylene	21.3	0.40	ug/L	20.0		107	80-121	3.23	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	3.85	30	
Xylenes, total	31.8	0.60	ug/L	30.0		106	76-127	3.43	30	
Styrene	10.5	0.20	ug/L	10.0		105	80-124	3.02	30	
Bromoform	9.39	0.20	ug/L	10.0		93.9	51-134	4.00	30	
1,1,2,2-Tetrachloroethane	10.1	0.20	ug/L	10.0		101	77-123	3.75	30	
1,2,3-Trichloropropane	10.5	0.25	ug/L	10.0		105	76-125	3.32	30	
trans-1,4-Dichloro 2-Butene	9.67	1.00	ug/L	10.0		96.7	55-129	9.40	30	
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130	2.12	30	
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120	3.48	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Isopropyl Benzene	10.6	0.20	ug/L	10.0		106	80-128	2.77	30	
2-Chlorotoluene	10.3	0.10	ug/L	10.0		103	78-122	1.97	30	
4-Chlorotoluene	10.5	0.20	ug/L	10.0		105	80-121	4.78	30	
t-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-125	3.41	30	
1,3,5-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-129	2.68	30	
1,2,4-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-127	3.31	30	
s-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-129	3.72	30	
4-Isopropyl Toluene	10.7	0.20	ug/L	10.0		107	79-130	4.73	30	
1,3-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	5.02	30	
1,4-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	3.95	30	
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129	3.41	30	
1,2-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	4.92	30	
1,2-Dibromo-3-chloropropane	9.46	0.50	ug/L	10.0		94.6	62-123	5.51	30	
1,2,4-Trichlorobenzene	10.7	0.50	ug/L	10.0		107	64-124	4.63	30	
Hexachloro-1,3-Butadiene	10.7	0.50	ug/L	10.0		107	58-123	10.00	30	
Naphthalene	10.6	0.50	ug/L	10.0		106	50-134	5.74	30	
1,2,3-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	49-133	6.61	30	
Dichlorodifluoromethane	9.81	0.20	ug/L	10.0		98.1	48-147	6.49	30	
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	*5.00*		*98.9*	*80-129*			
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.04		ug/L	*5.00*		*101*	*80-120*			
Matrix Spike (BIL0047-MS1)	**Source: 20K0383-01**			Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:08						
Chloromethane	6.89	0.50	ug/L	10.0	ND	68.9	60-138			
Vinyl Chloride	7.70	0.10	ug/L	10.0	ND	77.0	66-133			
Bromomethane	7.32	1.00	ug/L	10.0	ND	73.2	72-131			
Chloroethane	8.10	0.20	ug/L	10.0	ND	81.0	60-155			
Trichlorofluoromethane	8.75	0.20	ug/L	10.0	ND	87.5	62-141			
Acrolein	43.5	5.00	ug/L	50.0	ND	87.0	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.91	0.20	ug/L	10.0	ND	89.1	76-129			
Acetone	50.2	5.00	ug/L	50.0	ND	100	58-142			
1,1-Dichloroethene	7.86	0.20	ug/L	10.0	ND	78.6	69-135			
Iodomethane	7.78	1.00	ug/L	10.0	ND	77.8	56-147			
Methylene Chloride	7.27	1.00	ug/L	10.0	ND	72.7	65-135			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BIL0047-MS1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:08							
Acrylonitrile	8.98	1.00	ug/L	10.0	ND	89.8	64-134			
Carbon Disulfide	7.46	0.20	ug/L	10.0	ND	74.6	78-125			*
trans-1,2-Dichloroethene	7.43	0.20	ug/L	10.0	ND	74.3	78-128			*
Vinyl Acetate	6.04	0.20	ug/L	10.0	ND	60.4	55-138			
1,1-Dichloroethane	7.62	0.20	ug/L	10.0	ND	76.2	76-124			
2-Butanone	48.6	5.00	ug/L	50.0	ND	97.3	61-140			
2,2-Dichloropropane	6.44	0.20	ug/L	10.0	ND	64.4	66-147			*
cis-1,2-Dichloroethene	7.18	0.20	ug/L	10.0	ND	71.8	80-121			*
Chloroform	7.61	0.20	ug/L	10.0	ND	76.1	80-122			*
Bromochloromethane	7.56	0.20	ug/L	10.0	ND	75.6	80-121			*
1,1,1-Trichloroethane	8.24	0.20	ug/L	10.0	ND	82.4	79-123			
1,1-Dichloropropene	7.69	0.10	ug/L	10.0	ND	76.9	80-127			*
Carbon tetrachloride	8.07	0.20	ug/L	10.0	ND	80.7	53-137			
1,2-Dichloroethane	8.14	0.20	ug/L	10.0	ND	81.4	75-123			
Benzene	7.27	0.20	ug/L	10.0	ND	72.7	80-120			*
Trichloroethene	7.49	0.20	ug/L	10.0	ND	74.9	80-120			*
1,2-Dichloropropane	7.25	0.20	ug/L	10.0	ND	72.5	80-120			*
Bromodichloromethane	7.07	0.20	ug/L	10.0	ND	70.7	80-121			*
Dibromomethane	8.26	0.20	ug/L	10.0	ND	82.6	80-120			
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-116			*, U
4-Methyl-2-Pentanone	47.1	2.50	ug/L	50.0	ND	94.2	67-133			
cis-1,3-Dichloropropene	6.81	0.20	ug/L	10.0	ND	68.1	80-124			*
Toluene	7.36	0.20	ug/L	10.0	ND	73.6	80-120			*
trans-1,3-Dichloropropene	7.31	0.20	ug/L	10.0	ND	73.1	71-127			
2-Hexanone	46.3	5.00	ug/L	50.0	ND	92.7	69-133			
1,1,2-Trichloroethane	7.98	0.20	ug/L	10.0	ND	79.8	80-121			*
1,3-Dichloropropane	7.72	0.10	ug/L	10.0	ND	77.2	80-120			*
Tetrachloroethene	7.62	0.20	ug/L	10.0	ND	76.2	80-120			*
Dibromochloromethane	7.51	0.20	ug/L	10.0	ND	75.1	65-135			
1,2-Dibromoethane	8.22	0.10	ug/L	10.0	ND	82.2	80-121			
Chlorobenzene	7.11	0.20	ug/L	10.0	ND	71.1	80-120			*
Ethylbenzene	7.11	0.20	ug/L	10.0	ND	71.1	80-120			*
1,1,1,2-Tetrachloroethane	7.38	0.20	ug/L	10.0	ND	73.8	80-120			*
m,p-Xylene	14.6	0.40	ug/L	20.0	ND	73.2	80-121			*
o-Xylene	7.13	0.20	ug/L	10.0	ND	71.3	80-121			*

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BIL0047-MS1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:08							
Xylenes, total	21.8	0.60	ug/L	30.0	ND	72.5	76-127			*
Styrene	7.05	0.20	ug/L	10.0	ND	70.5	80-124			*
Bromoform	6.50	0.20	ug/L	10.0	ND	65.0	51-134			
1,1,2,2-Tetrachloroethane	8.35	0.20	ug/L	10.0	ND	83.5	77-123			
1,2,3-Trichloropropane	9.21	0.25	ug/L	10.0	ND	92.1	76-125			
trans-1,4-Dichloro 2-Butene	5.76	1.00	ug/L	10.0	ND	57.6	55-129			
n-Propylbenzene	7.46	0.20	ug/L	10.0	ND	74.6	78-130			*
Bromobenzene	7.24	0.20	ug/L	10.0	ND	72.4	80-120			*
Isopropyl Benzene	7.48	0.20	ug/L	10.0	ND	74.8	80-128			*
2-Chlorotoluene	7.10	0.10	ug/L	10.0	ND	71.0	78-122			*
4-Chlorotoluene	7.14	0.20	ug/L	10.0	ND	71.4	80-121			*
t-Butylbenzene	7.61	0.20	ug/L	10.0	ND	76.1	78-125			*
1,3,5-Trimethylbenzene	7.33	0.20	ug/L	10.0	ND	73.3	80-129			*
1,2,4-Trimethylbenzene	7.23	0.20	ug/L	10.0	ND	72.3	80-127			*
s-Butylbenzene	7.82	0.20	ug/L	10.0	ND	78.2	78-129			
4-Isopropyl Toluene	7.52	0.20	ug/L	10.0	ND	75.2	79-130			*
1,3-Dichlorobenzene	7.08	0.20	ug/L	10.0	ND	70.8	80-120			*
1,4-Dichlorobenzene	7.27	0.20	ug/L	10.0	ND	72.7	80-120			*
n-Butylbenzene	7.31	0.20	ug/L	10.0	ND	73.1	74-129			*
1,2-Dichlorobenzene	7.22	0.20	ug/L	10.0	ND	72.2	80-120			*
1,2-Dibromo-3-chloropropane	8.30	0.50	ug/L	10.0	ND	83.0	62-123			
1,2,4-Trichlorobenzene	6.46	0.50	ug/L	10.0	ND	64.6	64-124			
Hexachloro-1,3-Butadiene	6.61	0.50	ug/L	10.0	ND	66.1	58-123			Q
Naphthalene	7.87	0.50	ug/L	10.0	ND	78.7	50-134			
1,2,3-Trichlorobenzene	6.67	0.50	ug/L	10.0	ND	66.7	49-133			
Dichlorodifluoromethane	9.42	0.20	ug/L	10.0	ND	94.2	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.40		ug/L	*5.00*	*5.45*	*108*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*	*5.01*	*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.97		ug/L	*5.00*	*4.91*	*99.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.07		ug/L	*5.00*	*5.03*	*101*	*80-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BIL0047-MSD1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:29							
Chloromethane	7.35	0.50	ug/L	10.0	ND	73.5	60-138	6.44	30	
Vinyl Chloride	7.66	0.10	ug/L	10.0	ND	76.6	66-133	0.47	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BIL0047-MSD1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:29							
Bromomethane	7.51	1.00	ug/L	10.0	ND	75.1	72-131	2.51	30	
Chloroethane	8.24	0.20	ug/L	10.0	ND	82.4	60-155	1.71	30	
Trichlorofluoromethane	9.29	0.20	ug/L	10.0	ND	92.9	62-141	6.02	30	
Acrolein	41.5	5.00	ug/L	50.0	ND	83.0	52-190	4.69	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.64	0.20	ug/L	10.0	ND	86.4	76-129	3.08	30	
Acetone	48.9	5.00	ug/L	50.0	ND	97.9	58-142	2.47	30	
1,1-Dichloroethene	7.81	0.20	ug/L	10.0	ND	78.1	69-135	0.66	30	
Iodomethane	7.56	1.00	ug/L	10.0	ND	75.6	56-147	2.84	30	
Methylene Chloride	7.04	1.00	ug/L	10.0	ND	70.4	65-135	3.23	30	
Acrylonitrile	8.52	1.00	ug/L	10.0	ND	85.2	64-134	5.25	30	
Carbon Disulfide	7.44	0.20	ug/L	10.0	ND	74.4	78-125	0.29	30	*
trans-1,2-Dichloroethene	7.50	0.20	ug/L	10.0	ND	75.0	78-128	0.95	30	*
Vinyl Acetate	5.89	0.20	ug/L	10.0	ND	58.9	55-138	2.62	30	
1,1-Dichloroethane	7.45	0.20	ug/L	10.0	ND	74.5	76-124	2.22	30	*
2-Butanone	48.2	5.00	ug/L	50.0	ND	96.4	61-140	0.89	30	
2,2-Dichloropropane	6.16	0.20	ug/L	10.0	ND	61.6	66-147	4.47	30	*
cis-1,2-Dichloroethene	7.02	0.20	ug/L	10.0	ND	70.2	80-121	2.23	30	*
Chloroform	7.29	0.20	ug/L	10.0	ND	72.9	80-122	4.32	30	*
Bromochloromethane	7.38	0.20	ug/L	10.0	ND	73.8	80-121	2.40	30	*
1,1,1-Trichloroethane	8.13	0.20	ug/L	10.0	ND	81.3	79-123	1.36	30	
1,1-Dichloropropene	7.52	0.10	ug/L	10.0	ND	75.2	80-127	2.20	30	*
Carbon tetrachloride	7.97	0.20	ug/L	10.0	ND	79.7	53-137	1.18	30	
1,2-Dichloroethane	7.79	0.20	ug/L	10.0	ND	77.9	75-123	4.31	30	
Benzene	7.12	0.20	ug/L	10.0	ND	71.2	80-120	2.17	30	*
Trichloroethene	7.17	0.20	ug/L	10.0	ND	71.7	80-120	4.34	30	*
1,2-Dichloropropane	6.93	0.20	ug/L	10.0	ND	69.3	80-120	4.42	30	*
Bromodichloromethane	6.85	0.20	ug/L	10.0	ND	68.5	80-121	3.14	30	*
Dibromomethane	7.81	0.20	ug/L	10.0	ND	78.1	80-120	5.61	30	*
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-116			*, U
4-Methyl-2-Pentanone	46.3	2.50	ug/L	50.0	ND	92.5	67-133	1.76	30	
cis-1,3-Dichloropropene	6.72	0.20	ug/L	10.0	ND	67.2	80-124	1.37	30	*
Toluene	7.23	0.20	ug/L	10.0	ND	72.3	80-120	1.81	30	*
trans-1,3-Dichloropropene	6.97	0.20	ug/L	10.0	ND	69.7	71-127	4.73	30	*
2-Hexanone	45.9	5.00	ug/L	50.0	ND	91.8	69-133	1.00	30	
1,1,2-Trichloroethane	7.62	0.20	ug/L	10.0	ND	76.2	80-121	4.60	30	*

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BIL0047-MSD1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:29							
1,3-Dichloropropane	7.52	0.10	ug/L	10.0	ND	75.2	80-120	2.62	30	*
Tetrachloroethene	7.41	0.20	ug/L	10.0	ND	74.1	80-120	2.78	30	*
Dibromochloromethane	7.39	0.20	ug/L	10.0	ND	73.9	65-135	1.62	30	
1,2-Dibromoethane	8.26	0.10	ug/L	10.0	ND	82.6	80-121	0.52	30	
Chlorobenzene	7.00	0.20	ug/L	10.0	ND	70.0	80-120	1.62	30	*
Ethylbenzene	7.17	0.20	ug/L	10.0	ND	71.7	80-120	0.76	30	*
1,1,1,2-Tetrachloroethane	7.09	0.20	ug/L	10.0	ND	70.9	80-120	4.01	30	*
m,p-Xylene	14.5	0.40	ug/L	20.0	ND	72.3	80-121	1.17	30	*
o-Xylene	6.91	0.20	ug/L	10.0	ND	69.1	80-121	3.13	30	*
Xylenes, total	21.4	0.60	ug/L	30.0	ND	71.2	76-127	1.81	30	*
Styrene	6.89	0.20	ug/L	10.0	ND	68.9	80-124	2.28	30	*
Bromoform	6.20	0.20	ug/L	10.0	ND	62.0	51-134	4.66	30	
1,1,2,2-Tetrachloroethane	7.81	0.20	ug/L	10.0	ND	78.1	77-123	6.69	30	
1,2,3-Trichloropropane	8.87	0.25	ug/L	10.0	ND	88.7	76-125	3.69	30	
trans-1,4-Dichloro 2-Butene	4.90	1.00	ug/L	10.0	ND	49.0	55-129	16.00	30	*
n-Propylbenzene	7.25	0.20	ug/L	10.0	ND	72.5	78-130	2.81	30	*
Bromobenzene	6.93	0.20	ug/L	10.0	ND	69.3	80-120	4.44	30	*
Isopropyl Benzene	7.26	0.20	ug/L	10.0	ND	72.6	80-128	3.03	30	*
2-Chlorotoluene	6.95	0.10	ug/L	10.0	ND	69.5	78-122	2.12	30	*
4-Chlorotoluene	7.09	0.20	ug/L	10.0	ND	70.9	80-121	0.69	30	*
t-Butylbenzene	7.41	0.20	ug/L	10.0	ND	74.1	78-125	2.71	30	*
1,3,5-Trimethylbenzene	7.14	0.20	ug/L	10.0	ND	71.4	80-129	2.67	30	*
1,2,4-Trimethylbenzene	6.96	0.20	ug/L	10.0	ND	69.6	80-127	3.83	30	*
s-Butylbenzene	7.62	0.20	ug/L	10.0	ND	76.2	78-129	2.58	30	*
4-Isopropyl Toluene	7.29	0.20	ug/L	10.0	ND	72.9	79-130	3.10	30	*
1,3-Dichlorobenzene	7.00	0.20	ug/L	10.0	ND	70.0	80-120	1.11	30	*
1,4-Dichlorobenzene	6.97	0.20	ug/L	10.0	ND	69.7	80-120	4.26	30	*
n-Butylbenzene	7.28	0.20	ug/L	10.0	ND	72.8	74-129	0.45	30	*
1,2-Dichlorobenzene	6.98	0.20	ug/L	10.0	ND	69.8	80-120	3.43	30	*
1,2-Dibromo-3-chloropropane	8.07	0.50	ug/L	10.0	ND	80.7	62-123	2.86	30	
1,2,4-Trichlorobenzene	6.42	0.50	ug/L	10.0	ND	64.2	64-124	0.55	30	
Hexachloro-1,3-Butadiene	6.81	0.50	ug/L	10.0	ND	68.1	58-123	2.97	30	Q
Naphthalene	7.98	0.50	ug/L	10.0	ND	79.8	50-134	1.36	30	
1,2,3-Trichlorobenzene	6.72	0.50	ug/L	10.0	ND	67.2	49-133	0.75	30	
Dichlorodifluoromethane	8.98	0.20	ug/L	10.0	ND	89.8	48-147	4.78	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BIL0047-MSD1)	**Source: 20K0383-01**		Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 16:29							
Surrogate: 1,2-Dichloroethane-d4	5.40		ug/L	*5.00*	*5.45*	*108*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*	*5.01*	*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.99		ug/L	*5.00*	*4.91*	*99.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*	*5.03*	*101*	*80-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Semivolatile Organic Compounds - SIM - Quality Control

Batch BIK0841 - EPA 3520C (Liq Liq)

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIK0841-BLK1)				Prepared: 29-Nov-2020 Analyzed: 12-Dec-2020 15:21						
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	9.26		ug/L	*10.0*		*92.6*	*33.6-120*			
LCS (BIK0841-BS1)				Prepared: 29-Nov-2020 Analyzed: 12-Dec-2020 15:46						
1,4-Dioxane	8.0	0.4	ug/L	10.0		79.9	39.9-120			
Surrogate: 1,4-Dioxane-d8	8.81		ug/L	*10.0*		*88.1*	*33.6-120*			
LCS Dup (BIK0841-BSD1)				Prepared: 29-Nov-2020 Analyzed: 12-Dec-2020 16:11						
1,4-Dioxane	8.7	0.4	ug/L	10.0		87.3	39.9-120	8.87	30	
Surrogate: 1,4-Dioxane-d8	8.39		ug/L	*10.0*		*83.9*	*33.6-120*			
Matrix Spike (BIK0841-MS1)	**Source: 20K0383-01**			Prepared: 29-Nov-2020 Analyzed: 12-Dec-2020 17:52						
1,4-Dioxane	10.1	0.4	ug/L	10.0	2.3	78.5	35.1-120			
Surrogate: 1,4-Dioxane-d8	7.73		ug/L	*10.0*	*8.22*	*77.3*	*33.6-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BIK0841-MSD1)	**Source: 20K0383-01**			Prepared: 29-Nov-2020 Analyzed: 12-Dec-2020 18:17						
1,4-Dioxane	10.9	0.4	ug/L	10.0	2.3	86.4	35.1-120	7.55	30	
Surrogate: 1,4-Dioxane-d8	8.23		ug/L	*10.0*	*8.22*	*82.3*	*33.6-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	14-Dec-2020 14:53

Petroleum Hydrocarbons - Quality Control

Batch BIK0813 - EPA 3510C SepF

Instrument: FID3 Analyst: CTO/VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIK0813-BLK1)				Prepared: 26-Nov-2020 Analyzed: 28-Nov-2020 16:47						
Gasoline Range Organics (Tol-C12)	ND	0.25	mg/L							U
Diesel Range Organics (C12-C24)	ND	0.50	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	1.00	mg/L							U
Surrogate: o-Terphenyl	0.188		mg/L	*0.225*		*83.7*	*50-150*			
Surrogate: n-Triacontane	0.149		mg/L	*0.225*		*66.1*	*50-150*			

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Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE

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1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE

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cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE

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Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP
Bromoform	DoD-ELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE

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Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE

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1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
n-Hexane	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	
2-Pentanone	WADOE

EPA 8270E-SIM in Water

1,4-Dioxane	WADOE,DoD-ELAP
1,4-Dioxane	WADOE,NELAP,DoD-ELAP
1,4-Dioxane	WADOE,NELAP,DoD-ELAP
1,4-Dioxane	NELAP,DoD-ELAP

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP

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Diesel Range Organics (C12-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
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Notes and Definitions

*	Flagged value is not within established control limits.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

08 December 2020

Gary Zimmerman
Golder Associates
18300 NE Union Hill Road Suite 200
Redmond, WA 98052-3333

RE: Landsburg

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20K0413	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 20K0413	Turn-around Requested: STANDARD
ARI Client Company: GOLDER	Phone:
Client Contact: GARY ZIMMERMAN / JOSEPH XI	
Client Project Name: LANDSBURG GW	
Client Project #: 923100006.2020	Samplers: T. HASKINS / C. KUBICKI

Page: 1	of 1
Date: 11/25/20	Ice Present?
No. of Coolers: 3	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs CLIENT LIST	Analysis Requested: TPH HCID (HOLD FOLLOW UP)	Notes/Comments
LMW-6-1120	11/24/20	0820	GW	9	X	X	ANALYSIS IN ACCORDANCE WITH MSA BETWEEN GOLDER AND ARI
LMW-7-1120		0936			X	X	
LMW-3-1120		1110			X	X	
LMW-5-1120		1200			X	X	
LMW-8-1120		1330			X	X	
LMW-9-1120		1440			X	X	
LMW-14-1120	12/25/20	0805			X	X	
LMW-15-1120		0915			X	X	
LMW-11-1120		1025			X	X	
TB	11/25/20	0745	DI	3	X		

Comments/Special Instructions
- ECOLOGY EIM EDD
- CLIENT SPECIFIC RLs / ANALYTE LIST

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	THOMAS HASKINS	Samantha Colon		
Company:	GOLDER	ARI		
Date & Time:	11/25/20 1212	11/25/2020 1212		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-6-1120	20K0413-01	Water	24-Nov-2020 08:20	25-Nov-2020 12:12
LMW-7-1120	20K0413-02	Water	24-Nov-2020 09:36	25-Nov-2020 12:12
LMW-3-1120	20K0413-03	Water	24-Nov-2020 11:10	25-Nov-2020 12:12
LMW-5-1120	20K0413-04	Water	24-Nov-2020 12:00	25-Nov-2020 12:12
LMW-8-1120	20K0413-05	Water	24-Nov-2020 13:30	25-Nov-2020 12:12
LMW-9-1120	20K0413-06	Water	24-Nov-2020 14:40	25-Nov-2020 12:12
LMW-14-1120	20K0413-07	Water	25-Nov-2020 08:05	25-Nov-2020 12:12
LMW-15-1120	20K0413-08	Water	25-Nov-2020 09:15	25-Nov-2020 12:12
LMW-11-1120	20K0413-09	Water	25-Nov-2020 10:25	25-Nov-2020 12:12
TB	20K0413-10	Water	25-Nov-2020 10:25	25-Nov-2020 12:12

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Work Order Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Hydrocarbon Identification (HCID) - WA-Ecology Method NW-HCID

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder | Project Name: Landsburg GW

COC No(s): _____ NA | Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20K0413 | Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1212 | 0.6 | 1.8 | 1.4 | ____ | ____ | ____

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: DOO 5206

Cooler Accepted by: SC | Date: 11/25/2020 | Time: 1212

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: KD | Date: 11/25/20 | Time: 1404 | Labels checked by: KD

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-6-1120

20K0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 08:20

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:04

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-01 I

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
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LMW-6-1120

20K0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 08:20

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	

Golder Associates	Project: Landsburg	
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LMW-6-1120

20K0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 08:20

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:04

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*99.3*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-6-1120

20K0413-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 08:20

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 20:29

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-01 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*91.1*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*70.6*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-7-1120

20K0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 09:36

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:25

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-02 I

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-7-1120

20K0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 09:36

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*111*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-7-1120

20K0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 09:36

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:25

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*98.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*102*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-7-1120

20K0413-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 09:36

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 20:52

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-02 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*96.1*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*74.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-3-1120

20K0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 11:10
Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:46

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-03 H
Preparation Batch: BIL0047 — Sample Size: 10 mL
Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-3-1120

20K0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 11:10

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:46

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*107*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-3-1120

20K0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 11:10

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 13:46

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-3-1120

20K0413-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 11:10
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 21:14

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-03 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*101*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*77.2*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-5-1120

20K0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 12:00
Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:06

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-04 I
Preparation Batch: BIL0047 — Sample Size: 10 mL
Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-5-1120

20K0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 12:00

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*108*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-5-1120

20K0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 12:00
Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:06

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-5-1120

20K0413-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 12:00
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 21:36

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-04 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*76.8*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-8-1120

20K0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 13:30
Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:26

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-05 H
Preparation Batch: BIL0047 — Sample Size: 10 mL
Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-8-1120

20K0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 13:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:26

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*110*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-8-1120

20K0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 13:30

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:26

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-8-1120

20K0413-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 13:30
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 22:43

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-05 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*74.7*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-9-1120

20K0413-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:47

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-06 H

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-9-1120

20K0413-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:47

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-9-1120

20K0413-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/24/2020 14:40

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 14:47

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*93.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*103*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-9-1120

20K0413-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/24/2020 14:40
Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 23:05

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-06 A 01
Preparation Batch: BIK0813 — Sample Size: 500 mL
Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*67.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*51.1*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-14-1120

20K0413-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 08:05

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:07

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-07 I

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-14-1120

20K0413-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 08:05

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:07

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*113*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-14-1120

20K0413-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 08:05

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:07

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-14-1120

20K0413-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/25/2020 08:05

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 23:27

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-07 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*105*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*74.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-15-1120

20K0413-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 09:15

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:28

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-08 H

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-15-1120

20K0413-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 09:15

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:28

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*110*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-15-1120

20K0413-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 09:15

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:28

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*99.7*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*101*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-15-1120

20K0413-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/25/2020 09:15

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/28/2020 23:49

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-08 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*68.4*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-11-1120

20K0413-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:48

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-09 E

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-11-1120

20K0413-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*106*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-11-1120

20K0413-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 15:48

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*96.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

LMW-11-1120

20K0413-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 11/25/2020 10:25

Instrument: FID3 Analyst: CTO/VTS — Analyzed: 11/29/2020 00:11

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 20K0413-09 A 01

Preparation Batch: BIK0813 — Sample Size: 500 mL

Prepared: 11/26/2020 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-C12)	GRO	1	0.25	ND	mg/L	U
Diesel Range Organics (C12-C24)	DRO	1	0.50	ND	mg/L	U
Motor Oil Range Organics (C24-C38)	RRO	1	1.00	ND	mg/L	U
Surrogate: o-Terphenyl			*50-150 %*	*88.2*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*61.5*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

TB

20K0413-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:20

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 20K0413-10 B

Preparation Batch: BIL0047 — Sample Size: 10 mL

Prepared: 12/02/2020 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Chloromethane	74-87-3	1	0.50	ND	ug/L	U
Vinyl Chloride	75-01-4	1	0.10	ND	ug/L	U
Bromomethane	74-83-9	1	1.00	ND	ug/L	U
Chloroethane	75-00-3	1	0.20	ND	ug/L	U
Trichlorofluoromethane	75-69-4	1	0.20	ND	ug/L	U
Acrolein	107-02-8	1	5.00	ND	ug/L	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	1	0.20	ND	ug/L	U
Acetone	67-64-1	1	5.00	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.20	ND	ug/L	U
Iodomethane	74-88-4	1	1.00	ND	ug/L	U
Methylene Chloride	75-09-2	1	1.00	ND	ug/L	U
Acrylonitrile	107-13-1	1	1.00	ND	ug/L	U
Carbon Disulfide	75-15-0	1	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.20	ND	ug/L	U
Vinyl Acetate	108-05-4	1	0.20	ND	ug/L	U
1,1-Dichloroethane	75-34-3	1	0.20	ND	ug/L	U
2-Butanone	78-93-3	1	5.00	ND	ug/L	U
2,2-Dichloropropane	594-20-7	1	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Chloroform	67-66-3	1	0.20	ND	ug/L	U
Bromochloromethane	74-97-5	1	0.20	ND	ug/L	U
1,1,1-Trichloroethane	71-55-6	1	0.20	ND	ug/L	U
1,1-Dichloropropene	563-58-6	1	0.10	ND	ug/L	U
Carbon tetrachloride	56-23-5	1	0.20	ND	ug/L	U
1,2-Dichloroethane	107-06-2	1	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.20	ND	ug/L	U
1,2-Dichloropropane	78-87-5	1	0.20	ND	ug/L	U
Bromodichloromethane	75-27-4	1	0.20	ND	ug/L	U
Dibromomethane	74-95-3	1	0.20	ND	ug/L	U
2-Chloroethyl vinyl ether	110-75-8	1	1.00	ND	ug/L	U
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

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20K0413-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.20	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.6*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

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20K0413-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 11/25/2020 10:25

Instrument: NT2 Analyst: LH — Analyzed: 12/02/2020 10:20

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Toluene-d8		*80-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene		*80-120 %*	*97.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4		*80-120 %*	*100*	*%*	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)			Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59							
Chloromethane	ND	0.50	ug/L							U
Vinyl Chloride	ND	0.10	ug/L							U
Bromomethane	ND	1.00	ug/L							U
Chloroethane	ND	0.20	ug/L							U
Trichlorofluoromethane	ND	0.20	ug/L							U
Acrolein	ND	5.00	ug/L							U
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.20	ug/L							U
Acetone	ND	5.00	ug/L							U
1,1-Dichloroethene	ND	0.20	ug/L							U
Iodomethane	ND	1.00	ug/L							U
Methylene Chloride	ND	1.00	ug/L							U
Acrylonitrile	ND	1.00	ug/L							U
Carbon Disulfide	ND	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.20	ug/L							U
Vinyl Acetate	ND	0.20	ug/L							U
1,1-Dichloroethane	ND	0.20	ug/L							U
2-Butanone	ND	5.00	ug/L							U
2,2-Dichloropropane	ND	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Chloroform	ND	0.20	ug/L							U
Bromochloromethane	ND	0.20	ug/L							U
1,1,1-Trichloroethane	ND	0.20	ug/L							U
1,1-Dichloropropene	ND	0.10	ug/L							U
Carbon tetrachloride	ND	0.20	ug/L							U
1,2-Dichloroethane	ND	0.20	ug/L							U
Benzene	ND	0.20	ug/L							U
Trichloroethene	ND	0.20	ug/L							U
1,2-Dichloropropane	ND	0.20	ug/L							U
Bromodichloromethane	ND	0.20	ug/L							U
Dibromomethane	ND	0.20	ug/L							U
2-Chloroethyl vinyl ether	ND	1.00	ug/L							U
4-Methyl-2-Pentanone	ND	2.50	ug/L							U
cis-1,3-Dichloropropene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
trans-1,3-Dichloropropene	ND	0.20	ug/L							U

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59						
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIL0047-BLK1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:59						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.94		ug/L	*5.00*		*98.7*	*80-129*			
Surrogate: Toluene-d8	4.99		ug/L	*5.00*		*99.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.82		ug/L	*5.00*		*96.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.06		ug/L	*5.00*		*101*	*80-120*			
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 07:37						
Chloromethane	9.32	0.50	ug/L	10.0		93.2	60-138			
Vinyl Chloride	10.2	0.10	ug/L	10.0		102	66-133			
Bromomethane	10.2	1.00	ug/L	10.0		102	72-131			
Chloroethane	10.3	0.20	ug/L	10.0		103	60-155			
Trichlorofluoromethane	8.96	0.20	ug/L	10.0		89.6	62-141			
Acrolein	48.2	5.00	ug/L	50.0		96.4	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.9	0.20	ug/L	10.0		109	76-129			
Acetone	46.0	5.00	ug/L	50.0		92.1	58-142			
1,1-Dichloroethene	9.91	0.20	ug/L	10.0		99.1	69-135			
Iodomethane	10.1	1.00	ug/L	10.0		101	56-147			
Methylene Chloride	9.66	1.00	ug/L	10.0		96.6	65-135			
Acrylonitrile	9.13	1.00	ug/L	10.0		91.3	64-134			
Carbon Disulfide	9.97	0.20	ug/L	10.0		99.7	78-125			
trans-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	78-128			
Vinyl Acetate	9.63	0.20	ug/L	10.0		96.3	55-138			
1,1-Dichloroethane	10.0	0.20	ug/L	10.0		100	76-124			
2-Butanone	47.9	5.00	ug/L	50.0		95.8	61-140			
2,2-Dichloropropane	10.0	0.20	ug/L	10.0		100	66-147			
cis-1,2-Dichloroethene	9.80	0.20	ug/L	10.0		98.0	80-121			
Chloroform	9.82	0.20	ug/L	10.0		98.2	80-122			
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121			
1,1,1-Trichloroethane	10.2	0.20	ug/L	10.0		102	79-123			
1,1-Dichloropropene	10.0	0.10	ug/L	10.0		100	80-127			
Carbon tetrachloride	10.2	0.20	ug/L	10.0		102	53-137			
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101	75-123			
Benzene	10.0	0.20	ug/L	10.0		100	80-120			
Trichloroethene	10.2	0.20	ug/L	10.0		102	80-120			

Golder Associates	Project: Landsburg	
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Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 07:37						
1,2-Dichloropropane	9.99	0.20	ug/L	10.0		99.9	80-120			
Bromodichloromethane	9.86	0.20	ug/L	10.0		98.6	80-121			
Dibromomethane	10.2	0.20	ug/L	10.0		102	80-120			
2-Chloroethyl vinyl ether	9.46	1.00	ug/L	10.0		94.6	64-116			
4-Methyl-2-Pentanone	50.1	2.50	ug/L	50.0		100	67-133			
cis-1,3-Dichloropropene	10.3	0.20	ug/L	10.0		103	80-124			
Toluene	10.1	0.20	ug/L	10.0		101	80-120			
trans-1,3-Dichloropropene	10.4	0.20	ug/L	10.0		104	71-127			
2-Hexanone	48.7	5.00	ug/L	50.0		97.4	69-133			
1,1,2-Trichloroethane	10.0	0.20	ug/L	10.0		100	80-121			
1,3-Dichloropropane	10.1	0.10	ug/L	10.0		101	80-120			
Tetrachloroethene	10.4	0.20	ug/L	10.0		104	80-120			
Dibromochloromethane	10.5	0.20	ug/L	10.0		105	65-135			
1,2-Dibromoethane	10.5	0.10	ug/L	10.0		105	80-121			
Chlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Ethylbenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	20.7	0.40	ug/L	20.0		103	80-121			
o-Xylene	10.1	0.20	ug/L	10.0		101	80-121			
Xylenes, total	30.8	0.60	ug/L	30.0		103	76-127			
Styrene	10.2	0.20	ug/L	10.0		102	80-124			
Bromoform	9.02	0.20	ug/L	10.0		90.2	51-134			
1,1,2,2-Tetrachloroethane	9.69	0.20	ug/L	10.0		96.9	77-123			
1,2,3-Trichloropropane	10.2	0.25	ug/L	10.0		102	76-125			
trans-1,4-Dichloro 2-Butene	8.80	1.00	ug/L	10.0		88.0	55-129			
n-Propylbenzene	10.3	0.20	ug/L	10.0		103	78-130			
Bromobenzene	10.2	0.20	ug/L	10.0		102	80-120			
Isopropyl Benzene	10.3	0.20	ug/L	10.0		103	80-128			
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122			
4-Chlorotoluene	10.0	0.20	ug/L	10.0		100	80-121			
t-Butylbenzene	10.3	0.20	ug/L	10.0		103	78-125			
1,3,5-Trimethylbenzene	10.3	0.20	ug/L	10.0		103	80-129			
1,2,4-Trimethylbenzene	10.3	0.20	ug/L	10.0		103	80-127			
s-Butylbenzene	10.4	0.20	ug/L	10.0		104	78-129			
4-Isopropyl Toluene	10.2	0.20	ug/L	10.0		102	79-130			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BIL0047-BS1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 07:37						
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
n-Butylbenzene	10.3	0.20	ug/L	10.0		103	74-129			
1,2-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dibromo-3-chloropropane	8.95	0.50	ug/L	10.0		89.5	62-123			
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0		102	64-124			
Hexachloro-1,3-Butadiene	9.64	0.50	ug/L	10.0		96.4	58-123			
Naphthalene	9.97	0.50	ug/L	10.0		99.7	50-134			
1,2,3-Trichlorobenzene	9.85	0.50	ug/L	10.0		98.5	49-133			
Dichlorodifluoromethane	10.5	0.20	ug/L	10.0		105	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.08		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.95		ug/L	*5.00*		*99.1*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.08		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.10		ug/L	*5.00*		*102*	*80-120*			
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Chloromethane	9.84	0.50	ug/L	10.0		98.4	60-138	5.47	30	
Vinyl Chloride	10.5	0.10	ug/L	10.0		105	66-133	2.87	30	
Bromomethane	10.8	1.00	ug/L	10.0		108	72-131	5.16	30	
Chloroethane	10.5	0.20	ug/L	10.0		105	60-155	2.04	30	
Trichlorofluoromethane	10.1	0.20	ug/L	10.0		101	62-141	12.40	30	
Acrolein	52.9	5.00	ug/L	50.0		106	52-190	9.20	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.1	0.20	ug/L	10.0		111	76-129	2.00	30	
Acetone	47.4	5.00	ug/L	50.0		94.7	58-142	2.82	30	
1,1-Dichloroethene	10.3	0.20	ug/L	10.0		103	69-135	4.33	30	
Iodomethane	10.5	1.00	ug/L	10.0		105	56-147	4.11	30	
Methylene Chloride	10.2	1.00	ug/L	10.0		102	65-135	5.67	30	
Acrylonitrile	9.48	1.00	ug/L	10.0		94.8	64-134	3.78	30	
Carbon Disulfide	10.2	0.20	ug/L	10.0		102	78-125	1.83	30	
trans-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	78-128	4.14	30	
Vinyl Acetate	9.82	0.20	ug/L	10.0		98.2	55-138	1.96	30	
1,1-Dichloroethane	10.4	0.20	ug/L	10.0		104	76-124	3.65	30	
2-Butanone	50.4	5.00	ug/L	50.0		101	61-140	5.13	30	
2,2-Dichloropropane	10.0	0.20	ug/L	10.0		100	66-147	0.12	30	
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	80-121	3.83	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Chloroform	10.2	0.20	ug/L	10.0		102	80-122	3.74	30	
Bromochloromethane	10.3	0.20	ug/L	10.0		103	80-121	0.43	30	
1,1,1-Trichloroethane	10.5	0.20	ug/L	10.0		105	79-123	3.21	30	
1,1-Dichloropropene	10.3	0.10	ug/L	10.0		103	80-127	2.66	30	
Carbon tetrachloride	10.5	0.20	ug/L	10.0		105	53-137	3.15	30	
1,2-Dichloroethane	10.6	0.20	ug/L	10.0		106	75-123	4.52	30	
Benzene	10.4	0.20	ug/L	10.0		104	80-120	4.26	30	
Trichloroethene	10.6	0.20	ug/L	10.0		106	80-120	3.86	30	
1,2-Dichloropropane	10.5	0.20	ug/L	10.0		105	80-120	5.13	30	
Bromodichloromethane	9.86	0.20	ug/L	10.0		98.6	80-121	0.00		
Dibromomethane	10.8	0.20	ug/L	10.0		108	80-120	5.14	30	
2-Chloroethyl vinyl ether	10.2	1.00	ug/L	10.0		102	64-116	7.52	30	
4-Methyl-2-Pentanone	52.9	2.50	ug/L	50.0		106	67-133	5.41	30	
cis-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	80-124	4.25	30	
Toluene	10.5	0.20	ug/L	10.0		105	80-120	4.19	30	
trans-1,3-Dichloropropene	10.8	0.20	ug/L	10.0		108	71-127	4.32	30	
2-Hexanone	51.0	5.00	ug/L	50.0		102	69-133	4.69	30	
1,1,2-Trichloroethane	10.6	0.20	ug/L	10.0		106	80-121	4.90	30	
1,3-Dichloropropane	10.3	0.10	ug/L	10.0		103	80-120	2.00	30	
Tetrachloroethene	10.6	0.20	ug/L	10.0		106	80-120	1.63	30	
Dibromochloromethane	10.8	0.20	ug/L	10.0		108	65-135	3.28	30	
1,2-Dibromoethane	10.8	0.10	ug/L	10.0		108	80-121	3.23	30	
Chlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	2.90	30	
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120	2.71	30	
1,1,1,2-Tetrachloroethane	10.5	0.20	ug/L	10.0		105	80-120	2.31	30	
m,p-Xylene	21.3	0.40	ug/L	20.0		107	80-121	3.23	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	3.85	30	
Xylenes, total	31.8	0.60	ug/L	30.0		106	76-127	3.43	30	
Styrene	10.5	0.20	ug/L	10.0		105	80-124	3.02	30	
Bromoform	9.39	0.20	ug/L	10.0		93.9	51-134	4.00	30	
1,1,2,2-Tetrachloroethane	10.1	0.20	ug/L	10.0		101	77-123	3.75	30	
1,2,3-Trichloropropane	10.5	0.25	ug/L	10.0		105	76-125	3.32	30	
trans-1,4-Dichloro 2-Butene	9.67	1.00	ug/L	10.0		96.7	55-129	9.40	30	
n-Propylbenzene	10.6	0.20	ug/L	10.0		106	78-130	2.12	30	
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120	3.48	30	

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Volatile Organic Compounds - Quality Control

Batch BIL0047 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BIL0047-BSD1)				Prepared: 02-Dec-2020 Analyzed: 02-Dec-2020 08:19						
Isopropyl Benzene	10.6	0.20	ug/L	10.0		106	80-128	2.77	30	
2-Chlorotoluene	10.3	0.10	ug/L	10.0		103	78-122	1.97	30	
4-Chlorotoluene	10.5	0.20	ug/L	10.0		105	80-121	4.78	30	
t-Butylbenzene	10.6	0.20	ug/L	10.0		106	78-125	3.41	30	
1,3,5-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-129	2.68	30	
1,2,4-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-127	3.31	30	
s-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-129	3.72	30	
4-Isopropyl Toluene	10.7	0.20	ug/L	10.0		107	79-130	4.73	30	
1,3-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	5.02	30	
1,4-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	3.95	30	
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129	3.41	30	
1,2-Dichlorobenzene	10.6	0.20	ug/L	10.0		106	80-120	4.92	30	
1,2-Dibromo-3-chloropropane	9.46	0.50	ug/L	10.0		94.6	62-123	5.51	30	
1,2,4-Trichlorobenzene	10.7	0.50	ug/L	10.0		107	64-124	4.63	30	
Hexachloro-1,3-Butadiene	10.7	0.50	ug/L	10.0		107	58-123	10.00	30	
Naphthalene	10.6	0.50	ug/L	10.0		106	50-134	5.74	30	
1,2,3-Trichlorobenzene	10.5	0.50	ug/L	10.0		105	49-133	6.61	30	
Dichlorodifluoromethane	9.81	0.20	ug/L	10.0		98.1	48-147	6.49	30	
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	*5.00*		*98.9*	*80-129*			
Surrogate: Toluene-d8	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.03		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.04		ug/L	*5.00*		*101*	*80-120*			

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Petroleum Hydrocarbons - Quality Control

Batch BIK0813 - EPA 3510C SepF

Instrument: FID3 Analyst: CTO/VTS

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIK0813-BLK1)			Prepared: 26-Nov-2020 Analyzed: 28-Nov-2020 16:47							
Gasoline Range Organics (Tol-C12)	ND	0.25	mg/L							U
Diesel Range Organics (C12-C24)	ND	0.50	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	1.00	mg/L							U
Surrogate: o-Terphenyl	0.188		mg/L	*0.225*		*83.7*	*50-150*			
Surrogate: n-Triacontane	0.149		mg/L	*0.225*		*66.1*	*50-150*			

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Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromomethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Trichlorofluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE

Golder Associates	Project: Landsburg	
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1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Acrylonitrile	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP
Vinyl Acetate	DoD-ELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
2,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP

Golder Associates	Project: Landsburg	
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cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	08-Dec-2020 20:18

Bromodichloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP
4-Methyl-2-Pentanone	DoD-ELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP
Toluene	DoD-ELAP,ADEC,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,CALAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP
2-Hexanone	DoD-ELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2-Trichloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE

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Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP
Tetrachloroethene	DoD-ELAP,ADEC,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP
o-Xylene	DoD-ELAP,ADEC,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP
Styrene	DoD-ELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP

Golder Associates	Project: Landsburg	
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Bromoform	DoD-ELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP
n-Propylbenzene	DoD-ELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP
Bromobenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP
t-Butylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE

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1,3,5-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP
1,2,4-Trimethylbenzene	DoD-ELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP
4-Isopropyl Toluene	DoD-ELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,4-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2-Dichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

Golder Associates	Project: Landsburg	
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Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
n-Hexane	WADOE
n-Hexane	
n-Hexane	WADOE
2-Pentanone	WADOE
2-Pentanone	WADOE
2-Pentanone	
2-Pentanone	WADOE

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,WADOE
Motor Oil Range Organics (C24-C38)	NELAP,DoD-ELAP,WADOE

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Motor Oil Range Organics (C24-C38) NELAP,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

Golder Associates	Project: Landsburg	
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Notes and Definitions

*	Flagged value is not within established control limits.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX B

Sample Integrity Data Sheets (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-2- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/23/20 **Time** 0930

Media Water **Station** LMW-2

Sample Type: [grab] time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 9.10 @ 08:25 ft BTOC (monument at elev. X) (bottom at 38.1 ft bgs, 4-in casing)

Screened Interval: 27.9 – 38.1 ft bgs Monument: 2.94 ags

Sand Pack Interval: 24.8-38.1 ft bgs (8-in hole) (~7.8 gal/sand pack vol)

Packer Depth – NA (~22.3 gal/casing vol) (~30.1 gal/total well vol)

Sample Description Extra volume collected for MS/MSD

clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
9-40 mL	VOA	VOA vial	HCl
12-500 mL, 6-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
6-500 mL	1,4-Dioxane	Glass amber	None

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2- 1120
Date 11/23/20
Time Begin Purge 0832
Time Collect Sample 0930

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
6.61	0837	10.7	6.81	724	0.82	49.2	1.32
6.60	0842	10.9	6.82	726	0.72	9.4	1.40
6.61	0847	10.9	6.82	725	0.68	-7.1	0.15
6.61	0852	10.9	6.82	724	0.65	-23.8	0.78
6.61	0857	10.9	6.82	722	0.63	-34.5	0.26
6.61	0902	10.9	6.82	721	0.62	-40.8	0.41
6.61	0907	10.9	6.83	720	0.61	-48.9	1.62
6.61	0912	10.9	6.83	718	0.60	-56.4	0.18
6.61	0917	10.9	6.84	716	0.60	-62.9	0.17
6.61	0923	10.9	6.84	715	0.59	-69.3	0.22

Comments: Redi-flo 2

Grundfos: ~80 Hz

Flow Rate: 1.5 ~~gpm~~ lpm

Sampler's Initials NH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-FB- 1120

Sampling Location Direct pour/end of dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Direct pour/ peristaltic pump with new tubing

Date 11/23/20 **Time** 1000

Media Water **Station** LMW- 2

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: NA

Sample Description Lab provided DI and VOC free DI water

Direct pour

Field Measurements on Sample (pH, conductivity, etc.)

No field measurements.

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2x 500µL	1,4-Dioxane	Glass amber	–

Sampler (signature) _____ **Date** 11/23/20

Supervisor (signature) _____ **Date** 12/2/20

Landsburg Master SIDS

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB-1120
Date 11/23/20
Time Begin Purge —
Time Collect Sample 1000

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU

Comments:

Sampler's Initials TK

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-4-1120
LMW-4-1120-D

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/23/20 **Time** 1050 / 1055

Media Water **Station** LMW-4-

Sample Type: [grab] time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 8.52 @ 209 ft BTOC (monument at elev. X) (bottom at 209.7 ft bgs, 4-in. casing)

Screened Interval: 195-209.7 ft bgs Monument: 2.76 ags

Sand Pack Interval: 189-209.7 ft bgs (8-in hole) (~12.3 gal/sand pack vol)

Packer Depth – 187.3 ft bgs (~133.3 gal/casing vol) (~14.6 gal/packer casing volume)

(~26.9 gal/total well vol below packer)

** Depths corrected for 70° inclination

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2x 500mL	1,4-Dioxane	Glass Amber	–

Sampler (signature) [signature] **Date** 12/1/20

Supervisor (signature) [signature] **Date** 12/2/20

Golder Associates Inc.

Landsburg Master SIDS

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4-1120 1123
Date 11/2-3/2012
Time Begin Purge 10:20
Time Collect Sample 1050 / 1055

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
~~10~~							
8.52	10:25	10.4	7.03	714	0.93	-72.9	0.59
8.51	10.30	10.5	6.91	717	0.74	-77.5	0.25
8.51	10:35	10.6	6.89	719	0.69	-79.9	0.50
8.51	10:40	10.6	6.88	720	0.66	-83.7	0.37
	collect sample						

Comments:

Grundfos: 80 Hz
Packer: 110 psi

Flow Rate: ~~gpm~~ 1.5 gpm

Sampler's Initials AH

Landsburg Master SIDS

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-10- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/23/20 **Time** 4:40 (PT) 1120

Media Water **Station** LMW-10

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 0.00 ft BTOC (monument at elev. X) (bottom at 289 ft bgs, 4-in casing)

Screened Interval: 267-289 ft bgs PVC Stickup: 3.12 ags

Sand Pack Interval: 258-289 ft bgs (9-in hole) (~18.2 gal/sand pack vol)

Packer Depth –NA (~191 gal/casing vol) (~209 gal/total well vol)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2x 500mL	1,4-Dioxane	Glass Amber	–

Sampler (signature) _____ **Date** 11/23/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10-
Date 11/23/20
Time Begin Purge 1138
Time Collect Sample 1210

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
0.65	11:43	9.7	8.78	255.6	0.89	-91.2	0.25
1.35	11:48	9.8	8.78	256.1	0.74	-141.2	0.23
1.95	11:53	9.8	8.77	256.1	0.69	-172.9	0.38
2.47	11:58	9.8	8.76	256.4	0.66	-184.1	0.79
3.06	1203	9.8	8.75	256.5	0.64	-188.9	0.67
3.65	1208	9.8	8.74	256.6	0.63	-190.4	0.94
	1210	Sample					

Comments:
Tank: 110
Throttle: 40
CPM: 2
CID: 50

Flow Rate: 350 mL/min

Sampler's Initials TH

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-13R- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/23/20 **Time** 1440

Media Water **Station** LMW-13R

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 6.57 @ 1411

Screened Interval: 115-140 ft

Sand Pack Interval: 110-150 ft

Packer Depth – NA

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2x 500mL	1,4-Dioxane	Glass Amber	-

Sampler (signature) _____ **Date** 11/23/20

Supervisor (signature) _____ **Date** 12/2/20

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R-
Date 11/23/20
Time Begin Purge 1415
Time Collect Sample 1440

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
6.75	2:20	10.1	7.35	652	0.75	-60.8	1.07
7.70	2:25	10.2	7.35	653	0.67	-71.5	0.57
6.75	2:30	10.2	7.36	654	0.64	-79.0	0.45
6.80	2:35	10.2	7.36	654	0.63	-81.5	0.53
	1440	collect	sample				

Comments:

Tank: 110
Throttle: 35
CPM: 2
CID: 48

Flow Rate: 400 mL/min

Sampler's Initials TH

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-12- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/23/20 **Time** 1355

Media Water **Station** LMW-12

Sample Type: [grab] time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 6.09 @ 1301

Screened Interval: 15-25 ft

Sand Pack Interval: 11-25 ft

Packer Depth – NA

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl
2-500mL	1,4-Dioxane	Glass amber	–

Sampler (signature) _____ **Date** 11/23/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12- 1120
Date 11/23/20
Time Begin Purge 1302
Time Collect Sample 1355

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
6.01	1307	10.6	6.50	278.0	0.87	6.4	23.2
6.04	1312	10.5	6.49	278.7	0.76	6.1	—
6.05	1317	10.5	6.44	287.9	0.69	~~3.0~~ 2.0	21.3
6.05	1322	10.4	6.50	297.4	0.67	-3.0	18.9
6.05	1327	10.4	6.54	366.2	0.65	-14.1	12.5
6.05	1332	10.4	6.57	409.3	0.64	-22.1	12.3
6.05	1337	10.4	6.58	437.9	0.62	-29.6	7.30
6.05	1342	10.4	6.59	446.4	0.62	-33.3	7.09
6.05	1347	10.5	6.59	452.9	0.61	-36.3	6.42
	1355	Collect	sample				

Comments:

Tank: 110
Throttle: 20
CPM: 2
CID: 47

Flow Rate: 400 mL/min

Sampler's Initials MH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-5- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/24/20 **Time** 1200

Media Water **Station** LMW-5

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 14.85 ft BTOC (monument at elev. X) (bottom at 241.8 ft bgs, 4-in casing)

Screened Interval: 231.8-241.8 ft bgs Monument: 3.24 ags

Sand Pack Interval: 231.8-241.8 ft bgs (8-in hole) (~5.9 gal/sand pack vol)

Packer Depth – 222.11 ft bgs (~150.8 gal/casing vol) (~12.9 gal/packer casing volume)

(~18.7 gal/total well vol below packer)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5- 1120
Date 11/24/20
Time Begin Purge 1129
Time Collect Sample 1200

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
14.25	1134	10.6	6.84	538	0.78	25.5	0.61
14.17	1139	10.8	6.84	540	0.70	14.9	0.98
14.13	1144	10.8	6.84	542	0.65	3.6	0.55
14.85	1149	10.9	6.84	542	0.63	-2.0	0.23
14.85	1154	10.9	6.84	542	0.62	-6.2	0.16

Comments:

Grundfos: ~135 Hz
Packer: 110 psi

Flow Rate: 0.7 gpm

Sampler's Initials TH

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-6-1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/24/20 **Time** 08:20

Media Water **Station** LMW-6

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 35.21 0730 ft BTOC (monument at elev. X) (bottom at 105.9 ft bgs, 4-in casing)

Screened Interval: 90.9-105.9 ft bgs Monument: 3.05 ags

Sand Pack Interval: 82.5-105.9 ft bgs (8-in hole) (~13.7 gal/sand pack vol)

Packer Depth – 81.22 ft bgs (~53 gal/casing vol) (~16.1 gal/packer casing volume)

(~29.9 gal/total well vol below packer)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

Landsburg Master SIDS

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6-1120
Date 11/24/20
Time Begin Purge 0735
Time Collect Sample 8:20

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
35.16	0740	9.6	6.72	202.5	1.08	145.6	16.4
35.15	0745	9.4	6.72	202.4	0.86	77.1	3.79
35.16	0750	10.0	6.74	202.4	0.74	20.8	2.52
35.16	0755	10.0	6.75	202.4	0.75	3.1	1.82
35.16	0800	10.0	6.75	202.1	0.72	-8.8	1.71
35.16	0805	10.0	6.76	201.9	0.70	-15.2	1.14
35.16	0810	10.1	6.76	202.1	0.69	-18.9	1.60
35.16	0815	10.1	6.77	201.8	0.68	-21.1	1.21

Comments:

Grundfos: 180 Hz
Packer: 110 psi

Flow Rate: ~~gpm~~
2.5 LPM

Sampler's Initials TH

Golder Associates Inc.

Landsburg Master SIDS

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-8- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler New Tubing and Peristaltic Pump

Date 11/24/20 **Time** 1330

Media Water **Station** LMW-8

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 4.05 @ 1222 ft BTOC (monument at elev. X) (bottom at 13 ft bgs, 2-in casing)

Screened Interval: 8–13 ft bgs PVC stickup: 1.72 ags

Sand Pack Interval: 6-13 ft bgs (8-in hole) (~5.1 gal/sand pack vol)

Packer Depth –NA (~1.9 gal/casing vol) (~7 gal/total well volume)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8- 1120

Date 11/24/20

Time Begin Purge 1220

Time Collect Sample ~~1330~~ 1330 TH

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
4.95	1231	11.2	6.72	467	1.75	-57.3	19.3
5.60	1236	11.2	6.72	467	1.39	-59.5	18.7
5.78	1241	11.3	6.73	469	1.39	-60.3	20.4
5.76	1246	11.3	6.73	578	1.44	-57.3	19.6
5.76	1251	11.3	6.73	470	1.42	-58.2	16.7
5.68	1256	11.4	6.74	472	1.42	-58.6	11.0
5.55	1301	11.4	6.74	473	1.32	-57.5	9.5
5.65	1306	11.3	6.73	472.7	0.66	-62.0	8.39
5.78	1311	11.3	6.74	473	0.64	-63.9	9.0
5.81	1316	11.3	6.74	474	0.62	-65	6.38
5.91	1321	11.3	6.74	474	0.62	-65	7.17

Comments:

Flow Rate: 150 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-3- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/24/20 **Time** 1110

Media Water **Station** LMW-3

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 13.62 @1014 ft BTOC (monument at elev. X) (bottom at 64.8 ft bgs, 4-in casing)

Screened Interval: 49.8 – 64.8 ft bgs Monument: 3.08 ags

Sand Pack Interval: 47.1-64.8 ft bgs (8-in hole) (~10.4 gal/sand pack vol)

Packer Depth – 39.33 ft bgs (~36.1 gal/casing vol) (~16.6 gal/packer casing volume)

(~27.0 gal/total well vol below packer)

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

Landsburg Master SIDS

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3- 1120
Date 11/24/20
Time Begin Purge 1020
Time Collect Sample 1110

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
12.16	1025	11.3	7.74	242.4	0.81	103.3	0.70
12.12	1030	11.3	7.74	242.8	0.74	98.0	0.52
12.13	1035	11.3	7.74	243.0	0.67	74.9	0.56
12.13	1040	11.3	7.74	243	0.66	62.5	0.61
12.13	1045	11.3	7.72	242.6	0.64	44.4	0.78
12.13	1050	11.3	7.72	244.7	0.64	35.7	0.57
12.13	1055	11.3	7.70	245.3	0.62	21.6	0.78
12.13	1100	11.3	7.69	245.8	0.61	17.9	0.62
12.13	1105	11.3	7.68	246.7	0.61	20.5	0.54

Comments:

Grundfos: ~135 Hz
Packer: 130 psi

Flow Rate: 0.7 gpm

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-7- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated Pump Grundfos

Date 11/24/20 **Time** 0936

Media Water **Station** LMW-7

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: — ft BTOC (monument at elev. X) (bottom at 253.7 ft bgs, 4-in casing)

Screened Interval: 239.6-253.7 ft bgs Monument: 3.09 ags

Sand Pack Interval: NA

Packer Depth – NA (~28.3 gal/casing vol) **Depths corrected for 70° inclination

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7-
Date 11/24/20
Time Begin Purge 08:51
Time Collect Sample 0936

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
-	0856	11.0	7.33	375.9	1.26	132.9	1.76
-	0901	13.0	7.33	395.5	0.95	119.8	2.84
-	0906	13.2	7.33	397.7	0.85	99.0	4.19
-	0911	13.3	7.34	398.3	0.78	31.1	4.92
-	0916	13.4	7.22	412.0	0.74	-24.7	2.75
-	0921	13.4	7.14	433.7	0.71	-36.3	1.49
-	0926	13.4	7.12	437.2	0.69	-41.5	1.66
-	0931	13.4	7.07	448.9	0.67	-42.6	1.33
-	0936	sample					

Comments:

Grundfos: 320 Hz

* WL tape won't go all the way down

Flow Rate: 0.71 gpm

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-9-1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/24/20 **Time** 1440

Media Water **Station** LMW-9

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 99.90 @1407 ft BTOC (monument at elev. X) (bottom at 159 ft bgs, 2-in casing)

Screened Interval: 149 – 159 ft bgs PVC stickup: 2.86 ags

Sand Pack Interval: 143.5-159 ft bgs (8-in hole) (~11.4 gal/sand pack vol)

Packer Depth – NA (~10.2 gal/casing vol) (~21.6 gal/total well volume)

Sample Description clear, no ~~samples~~ odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 11/25/20

Supervisor (signature) [signature] **Date** 12/2/20

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9-1120
Date 11/24/20
Time Begin Purge 1413
Time Collect Sample 1440

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
99.90	~~1413~~ 1413	10.4	6.97	516	1.57	13.2	2.41
99.90	1418 ~~1423~~	10.5	6.94	518	1.24	-5.0	1.92
99.92	1423 ~~1428~~	10.6	6.94	518	0.83	-26.8	1.80
99.92	1428 ~~1433~~	10.6	6.94	518	0.79	-31.7	0.18
99.92	1433 ~~1438~~	10.6	6.95	518	0.76	-34.2	0.22

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 51

Flow Rate: 500 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-14- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/25/20 **Time** 0805

Media Water **Station** LMW-14

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 165.39 @ 0729

Screened Interval: 156.5-172.3 ft bgs PVC Stickup: 2.9 ft ags

Sand Pack Interval: 152.5-175.8 ft bgs

Packer Depth –NA **Depths corrected for 75°inclination

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) [signature] **Date** 11/25/20

Supervisor (signature) [signature] **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14- 1120
Date 11/25/20
Time Begin Purge 0730
Time Collect Sample 0805

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
165.49	0735	10.3	6.56	944	1.07	93.2	0.99
165.78	0740	10.1	6.56	988	0.82	3.4	3.50
165.53	0745	10.1	6.57	947	0.75	-17.1	3.97
165.85	0750	10.1	6.55	938	0.71	-25.0	3.72
165.88	0755	10.1	6.55	938	0.69	-27.8	3.34
164.98	0800	10.1	6.56	933	0.68	-30.1	3.73

Comments:

Tank: 140
Throttle: ~~115~~ 100
CPM: 2
CID: 49

Flow Rate: 400 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-15-1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/25/20 **Time** 0915

Media Water **Station** LMW-15

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 151.82 @ 0840

Screened Interval: 235-245 ft

Sand Pack Interval: 231-245 ft

Packer Depth – NA

Sample Description clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 11/25/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15- 1120
Date 11/25/20
Time Begin Purge 0840
Time Collect Sample 0915

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
151.95	0845	9.6	7.32	350.9	3.23	-66.3	19.5
151.80	0850	9.5	7.40	352.4	1.35	-121.4	4.24
151.84	0855	9.5	7.44	356.7	1.09	-128.5	2.46
151.83	0900	9.5	7.46	357.7	0.95	-131.4	2.02
151.85	0905	9.5	7.47	358.2	0.90	-132.9	1.96
151.80	0910	9.5	7.48	358.9	0.86	-133.9	2.13

Comments:

Tank: 130
Throttle: 95
CPM: 2
CID: 53

Flow Rate: 400 mL/min

Sampler's Initials TH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-006.2020

Site Location Ravensdale, WA **Sample ID** LMW-11- 1120

Sampling Location Groundwater Monitoring well – end dedicated sampling tube

Technical Procedure Reference(s) Landsburg Mine Site Compliance Monitoring Plan (2017)

Type of Sampler Dedicated QED Bladder

Date 11/25/20 **Time** 1025

Media Water **Station** LMW-11

Sample Type: **grab** time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: 157.58 @ 0947 ft BTOC (monument at elev. X) (bottom at 707 ft bgs, 4-in casing)

Screened Interval: 696-707 ft bgs PVC Stickup: 2.70 ags

Sand Pack Interval: 688-707 ft bgs (8-in hole) (~11.2 gal/sand pack vol)

Packer Depth –NA (~360.4 gal/casing vol) (~371.6 gal/total well vol)

Sample Description Clear, no odor

Field Measurements on Sample (pH, conductivity, etc.)

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analyses	Container	Preservation/Amount
3-40 mL	VOA	VOA vial	HCl
4-500 mL, 2-40 mL	TPH-HCID, -Gx, -Dx	Glass amber, VOA vial	HCl

Sampler (signature) _____ **Date** 12/1/20

Supervisor (signature) _____ **Date** 12/2/20

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11-1120
Date 11/25/20
Time Begin Purge 0950
Time Collect Sample 1025

Water Level feet bmp	Time	Temp. °C	pH	Cond uS/cm	DO mg/L	ORP mV	Turbidity NTU
157.58	0955	9.9	7.29	402	3.10	16.1	1.02
157.58	1000	9.9	7.24	403	1.52	-17.8	0.56
157.58	1005	10.0	7.23	403	1.17	-30.2	1.25
157.58	1010	10.0	7.22	404	1.07	-34.5	0.71
157.58	1015	10.0	7.22	404	1.00	-38.1	0.49
157.58	1020	10.0	7.22	404	0.94	-40.6	0.43

Comments:

Tank: 130
Throttle: 110
CPM: 1
CID: 15

Flow Rate: 375 mL/min

Sampler's Initials NT