REPORT

Compliance Monitoring Report
June 2022 Quarterly Groundwater Sampling

Landsburg Mine Site

Submitted to:

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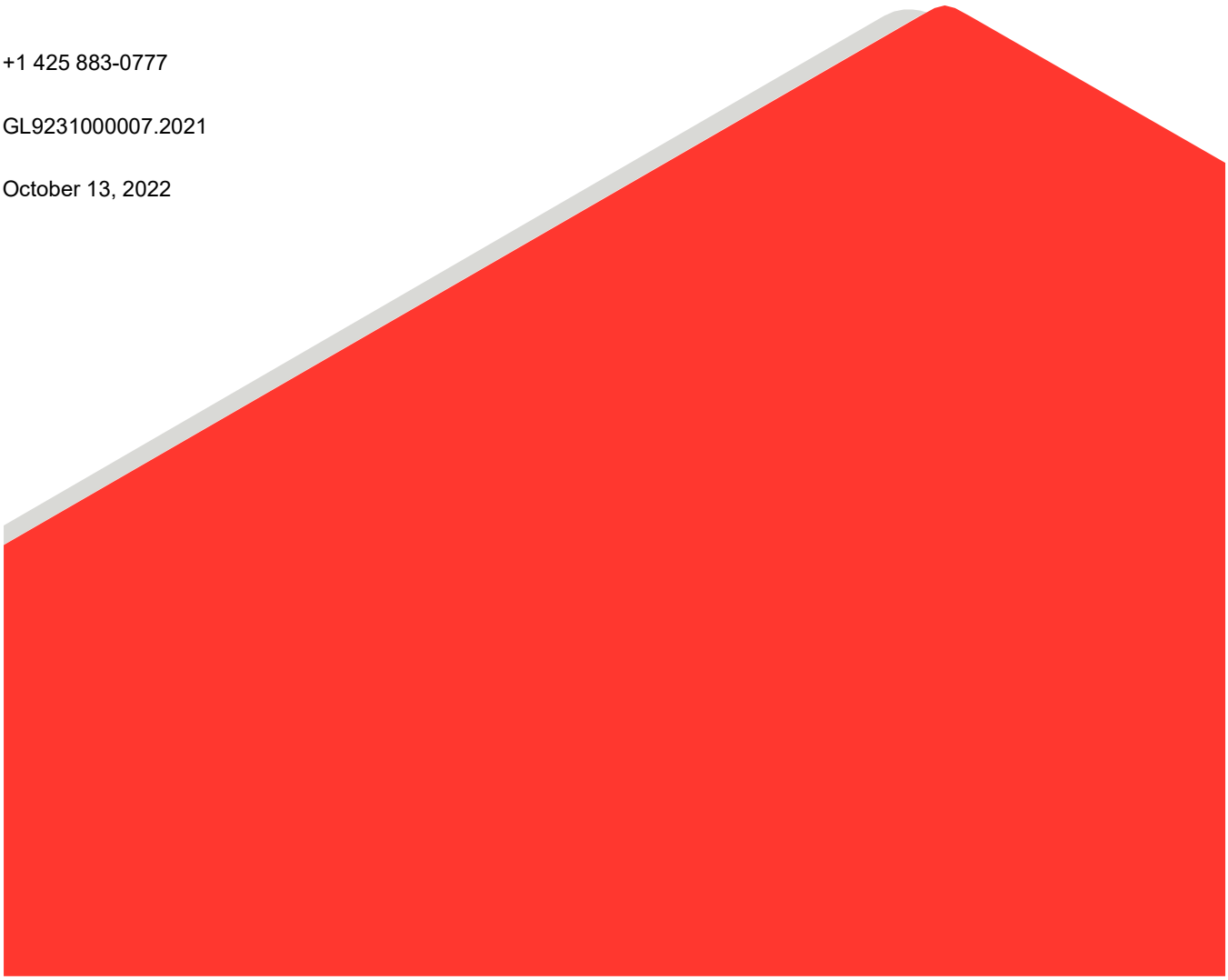

Distribution List

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1.0 INTRODUCTION

The Compliance Monitoring Plan (CMP) (Ecology 2017) describes the long-term confirmational monitoring required after remediation actions are completed at the Landsburg Mine Site (the Site). Additional groundwater monitoring requirements are specified in the Amendment to the Cleanup Action Plan (CAP) (Ecology 2021). This report presents the results of the second quarter 2022 long-term confirmational monitoring event, which was completed in June 2022.

The event was conducted from June 7 to 8, 2022, and included collecting groundwater samples from monitoring wells LMW-2, LMW-4, LMW-10, LMW-12, LMW-13R, LMW-20, LMW-21, and LMW-22. In accordance with the CAP, all other Site wells are currently are sampled semi-annually.

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. LMW-20, LMW-21, and LMW-22 monitor groundwater north of the Site, between the Site and the Cedar River.

2.0 SAMPLING ACTIVITIES

Groundwater sampling was conducted in accordance with the CMP (Ecology 2017) and the Amendment to the CAP (Ecology 2021), 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.
- Analyses of groundwater samples for the following parameters:
  - Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (USEPA) USEPA Method 8260D
  - 1,4-Dioxane by USEPA SW-846 Method 8270E
  - Total Petroleum Hydrocarbons (TPHs) by NWTPH-HCID

Appendix A presents the laboratory analytical data validation report with added data qualifiers noted. Appendix B presents the laboratory analytical data. Field sampling activities were documented on Sample Integrity Data Sheets (SIDS), provided in Appendix C.

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 LLC (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 for LMW-4-0622 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-4-0622 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 1 presents depths to groundwater measured during the event and calculated static water level elevations. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample at the Site.

3.0 RESULTS

The results of Site groundwater monitoring wells for the June 2022 monitoring event are summarized below:

- Laboratory analyses did not detect TPH above the laboratory reporting limits in any of the groundwater samples.
- There were no VOCs detected in groundwater above the trigger level concentrations prescribed in the CMP (Ecology 2017). The following VOCs were detected above their respective laboratory reporting limits:
  - 1,1-Dichloroethane (1,1-DCA) was detected in LMW-12 at a concentration of 0.87 microgram per liter (µg/L). 1,1-DCA has been detected at low levels in this well in previous sampling events. The reported concentration is less than the MTCA Method B groundwater cleanup level of 7.68 µg/L.
  - 1,1-Dichloroethene (1,1-DCE) was detected in LMW-13R at a concentration of 0.39 µg/L, which is just above the laboratory limit of (0.2 µg/L). 1,1-DCE has not been previously detected in LMW-13R, or other Site wells. The reported concentration is less than the MTCA Method B groundwater cleanup level of 400 µg/L.
  - Chloroethane was detected in LMW-12 at 0.89 µg/L. The chloroethane detection in LMW-12 is consistent in concentration with previous detections of chloroethane in this well. The reported concentrations are less than the MTCA Method B groundwater cleanup level of 80 µg/L.
- 1,4-Dioxane results include the following:
  - 1,4-dioxane was detected in LMW-2 (2.2 µg/L), LMW-4 (2.2 µg/L), and LMW-12 (0.7 µg/L). 1,4-dioxane has not been detected in any other Site monitoring wells. 1,4-Dioxane was also not detected in the three monitoring wells between the Site and the Cedar River (LMW-20, LMW-21, LMW-22). The June 2022 results are consistent with 1,4-dioxane concentrations reported during previous sampling of these wells. Under the approved Amendment to the CAP (Ecology 2021), 5 years of quarterly groundwater samples (20 rounds of sampling) will be collected in order to conduct a statistical analysis on 1,4-dioxane trends (CAP Amendment Section 4.2). The progression of the quarterly sampling for 1,4-dioxane is as follows:
  - LMW-2 and LMW-4 have 19 rounds of sampling data available for 1,4-dioxane.
  - LMW-10 has 18 rounds of sampling data available for 1,4-dioxane. 1,4-Dioxane has never been detected at LMW-10 in all rounds of sampling.
  - LMW-12 has 17 rounds of sampling data available for 1,4-dioxane.

- LMW-13R has 17 rounds of sampling data available for 1,4-dioxane. 1,4-Dioxane has never been detected at LMW-13R in all rounds of sampling.

4.0 NEXT SAMPLING EVENT

The next compliance monitoring event is a quarterly confirmational monitoring event completed in September 2022. It included sampling of Site groundwater monitoring wells LMW-2 through LMW-15. The next round of sampling for Cedar River Pipeline Road wells LMW-20, LMW-21, and LMW-22 will be December 2022.

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5.0 REFERENCES

Washington State Department of Ecology (Ecology). 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.

Ecology. 2021. Amendment to Cleanup Action Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. March 26.

Tables

Table 1: Groundwater Elevation Data, Landsburg Mine Site, June 7, 2022

	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	LMW-20	LMW-21	LMW-22
Water Depths																		
Date of data collection	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022	6/7/2022
Time of data collection	1:21 PM	9:26 AM	9:54 AM	10:50 AM	10:24 AM	12:37 PM	9:34 AM	10:12 AM	10:04 AM	12:25 PM	1:08 PM	1:34 PM	1:31 PM	12:51 PM	1:02 PM	12:12 PM	10:54 AM	12:12 PM
Measured to Top of PVC (ft btc)	135.14	6.37	12.08	7.80	13.65	22.39	210.32	6.85	99.41	0.45	157.27	6.24	7.80	159.31	151.11	15.30	10.04	15.30
Surveyed Elevation																		
Top of PVC (ft NAVD88)	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	546.8	544.09	542.86
Top of Monument (ft NAVD88)	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	546.92	544.36	543.13
Ground Level (ft NAVD88)	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	543.24	540.58	540.00
Corrected Water Elevation																		
Using PVC elevation (ft NAVD88)	**630.22**	**611.42**	**644.67**	**611.47**	**644.62**	**609.94**	**561.19**	**640.12**	**644.58**	**618.53**	**644.92**	**619.11**	**618.06**	**645.81**	**645.35**	**531.50**	**534.05**	**527.56**

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 NAVD88 = elevation in feet NAVD88

Table 2: June 2022 Groundwater Analytical Results Landsburg Mine Site

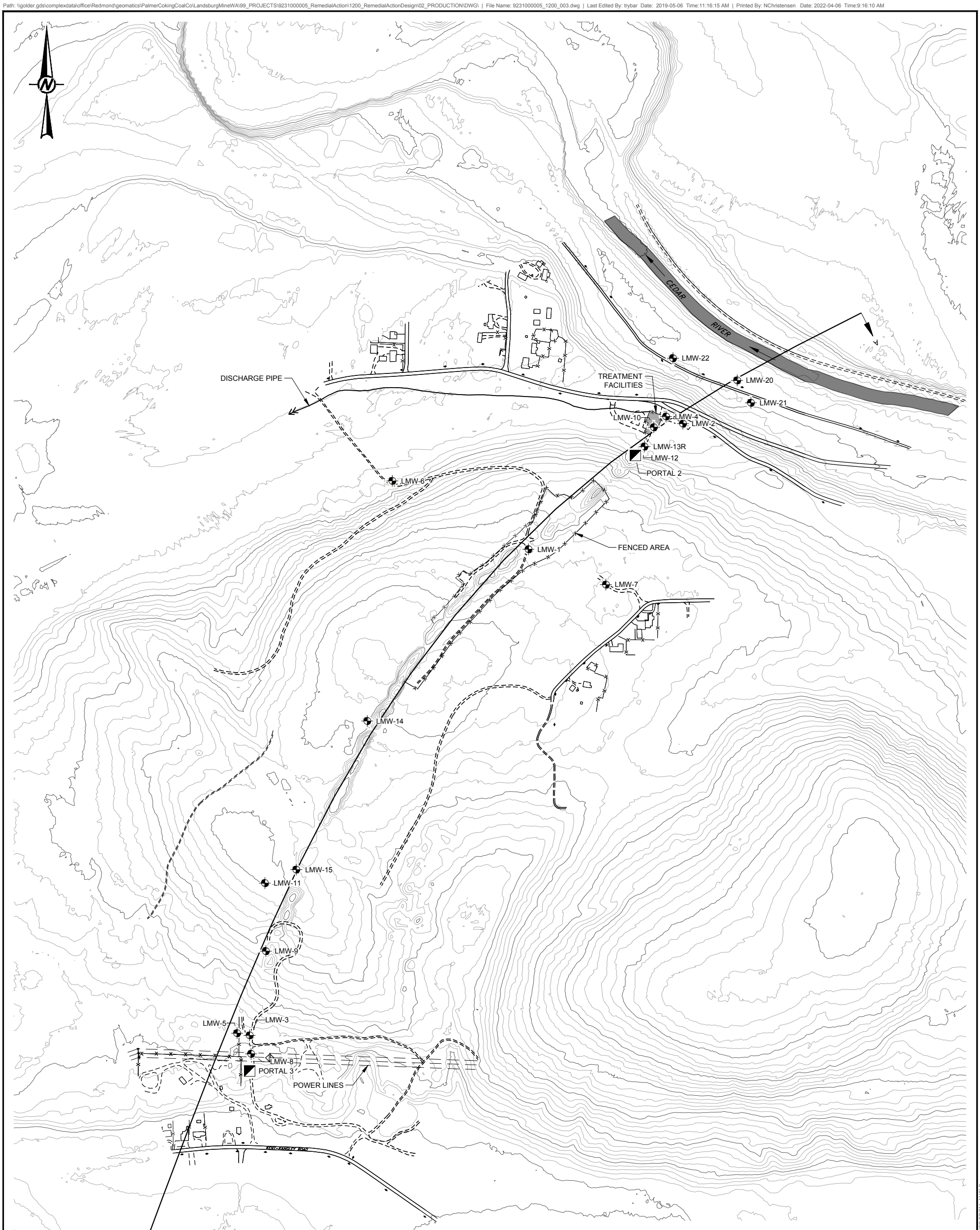
ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-4	LMW-10	LMW-12	LMW-13R	LMW-20	LMW-21	LMW-22	Field Blank	Trip Blank 1	Trip Blank 2
		6/7/2022	-	6/7/2022	6/7/2022	6/8/2022	6/7/2022	6/8/2022	6/8/2022	6/8/2022	6/7/2022	-	-
Field Parameter													
Temperature	°C	12.7	-	10.8	11.7	10.5	11.2	11.4	12.1	10.8	-	-	-
pH	stnd	6.45	-	6.65	8.47	6.20	6.95	6.15	7.12	6.88	-	-	-
Specific Conductance	uS/cm	785	-	728	274	540	674	221.9	267.9	291.1	-	-	-
Dissolved Oxygen	mg/L	3.6	-	3.81	3.15	4.19	3.65	4.76	3.53	2.58	-	-	-
ORP	mV	-83.6	-	-56.0	-155.3	-39.1	-99.7	94.5	-55.1	-100.7	-	-	-
Turbidity	NTU	0.17	-	0.21	0.63	3.71	0.25	0.25	9.02	10.8	-	-	-
Volatile Organic Compounds (VOCs)													
1,1,1,2-Tetrachloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1,1-Trichloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1,2,2-Tetrachloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1,2-Trichloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1-Dichloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	**0.87**	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1-Dichloroethene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.39**	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,1-Dichloropropene	ug/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	0.10 U	0.10 U	0.10 U
1,2,3-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U
1,2,3-Trichloropropane	ug/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	0.25 U	0.25 U	0.25 U
1,2,4-Trichlorobenzene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U
1,2,4-Trimethylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,2-Dibromo-3-Chloropropane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,2-Dichloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,2-Dichloropropane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,3,5-Trimethylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,3-Dichlorobenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
1,3-Dichloropropane	ug/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	0.10 U	0.10 U	0.10 U
1,4-Dichlorobenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
2,2-Dichloropropane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
2-Chloroethyl vinyl ether	ug/L	1.00 UJ	1.00 UJ	1.00 R	1.00 UJ	1.00 UJ	1.00 UJ	NA	NA	NA	1.00 U	1.00 U	1.00 U
2-Chlorotoluene	ug/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	0.10 U	0.10 U	0.10 U
2-Hexanone	ug/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	NA	NA	NA	5.00 U	5.00 U	5.00 U
4-Chlorotoluene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
4-Isopropyl Toluene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Acetone	ug/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	NA	NA	NA	5.00 U	5.00 U	5.00 U
Acrolein	ug/L	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ	NA	NA	NA	5.00 U	5.00 U	5.00 U
Acrylonitrile	ug/L	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	1.00 UJ	NA	NA	NA	1.00 U	1.00 U	1.00 U
Benzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Bromobenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Bromochloromethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Bromoform	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Bromomethane	ug/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA	NA	1.00 U	1.00 U	1.00 U
Carbon Disulfide	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Carbon Tetrachloride	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
CFC-11	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
CFC-113	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Chlorobenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Chlorodibromomethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Chloroethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	**0.89**	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Chloroform	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Chloromethane	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U

Table 2: June 2022 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-4	LMW-10	LMW-12	LMW-13R	LMW-20	LMW-21	LMW-22	Field Blank	Trip Blank 1	Trip Blank 2
Cis-1,2-Dichloroethene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Cis-1,3-Dichloropropene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Dibromomethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Dichlorobromomethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Dichlorodifluoromethane	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Ethylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Ethylene Dibromide	ug/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	0.10 U	0.10 U	0.10 U
Hexachlorobutadiene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U
Iodomethane	ug/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA	NA	1.00 U	1.00 U	1.00 U
Isopropyl Benzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
m, p-Xylene	ug/L	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	NA	NA	NA	0.40 U	0.40 U	0.40 U
methyl ethyl ketone	ug/L	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	NA	NA	NA	5.00 U	5.00 U	5.00 U
Methyl isobutyl ketone	ug/L	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	NA	NA	NA	2.50 U	2.50 U	2.50 U
Methylene Chloride	ug/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA	NA	1.00 U	1.00 U	1.00 U
Naphthalene	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	0.50 U	0.50 U
n-Butylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
n-Propylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
o-Xylene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Sec-Butylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Styrene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
tert-butylbenzene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Tetrachloroethene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Toluene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Total Xylenes	ug/L	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	NA	NA	NA	0.60 U	0.60 U	0.60 U
Trans-1,2-Dichloroethene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Trans-1,3-Dichloropropene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Trans-1,4-Dichloro-2-butene	ug/L	1.00 U	1.00 U	1.00 UJ	1.00 U	1.00 U	1.00 U	NA	NA	NA	1.00 U	1.00 U	1.00 U
Trichloroethene	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Vinyl Acetate	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	NA	NA	NA	0.20 U	0.20 U	0.20 U
Vinyl Chloride	ug/L	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	0.10 U	0.10 U	0.10 U
Semi-Volatile Organic Compounds (SVOCs)	ug/L												
1,4-Dioxane	ug/L	**2.2**	**2.2**	**2.2**	0.4 U	**0.7**	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NA	NA
Hydrocarbon Identification	ug/L												
Diesel Range	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	NA	NA	NA	0.50 U	NA	NA
Gas Range		0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA	NA	0.25 U	NA	NA
Lube Oil Range	ug/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA	NA	1.00 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.
UJ- Non-Detect Result, RL is estimated
R - Analytical result is unusable because certain data quality criteria were not met.
Bold values indicate detections above the RL.
NA - Not Applicable

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

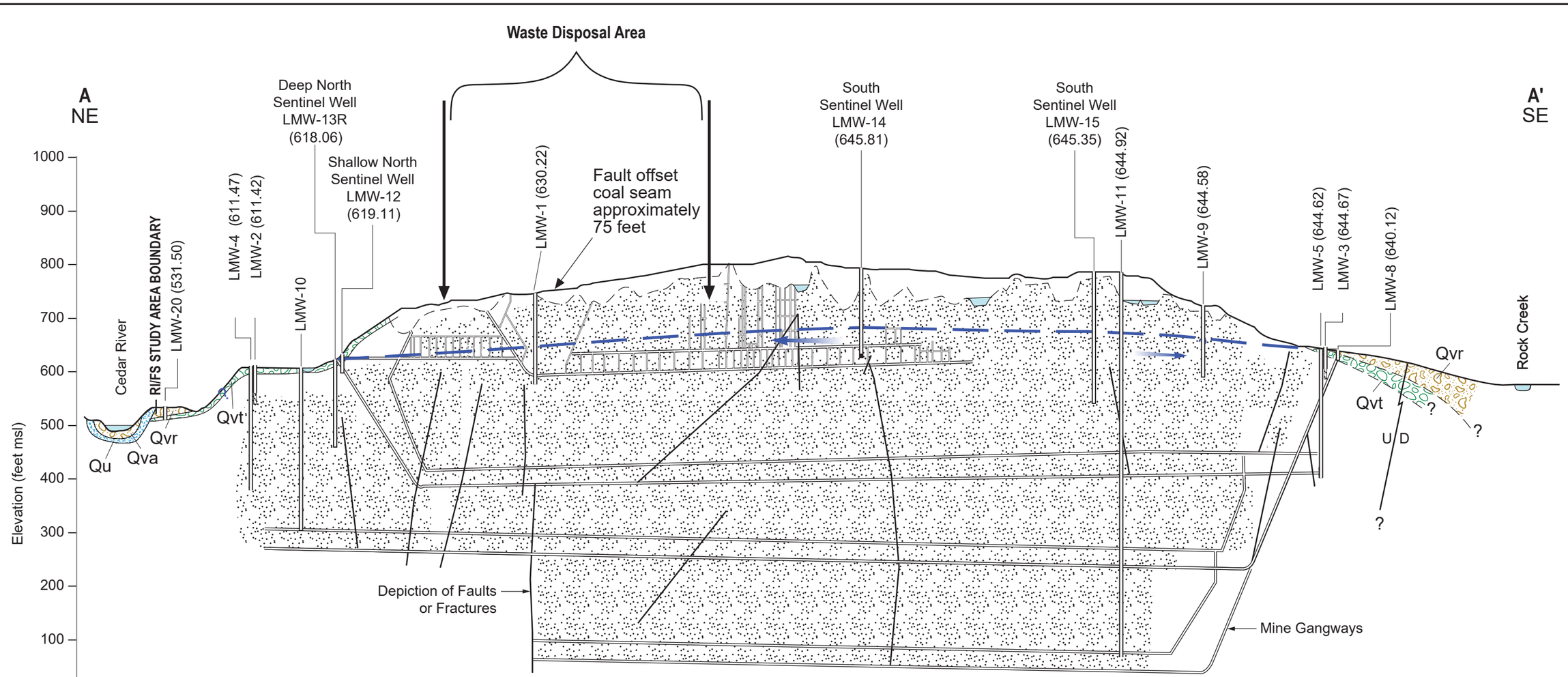
CONSULTANT
GOLDER

YYYY-MM-DD	2019-05-06
DESIGNED	REDMOND
PREPARED	JX
REVIEWED	JX
APPROVED	GZ

PROJECT
LANDSBURG MINE SITE
MTCA REMEDIAL ACTION

TITLE
GROUNDWATER MONITORING LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
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 06/07/2022

CLIENT: LANDSBURG PLP GROUP
CONSULTANT: WSP GOLDER
YYYY-MM-DD: 2022-03-07
PREPARED: REDMOND
DESIGN:
REVIEW:
APPROVED:

PROJECT: LANDSBURG MINE SITE
TITLE: **CROSS-SECTION ALONG STRIKE AT COAL SEAM JUNE 7, 2022**
CROSS-SECTION A-A'
PROJECT No. 923-1000-007
PHASE 2021
FIGURE 2

G:\PalmerCokingCoal\Cal\LandsburgMineWA\99_PROJECTS\923100002_Ph1_Remediation\R154102_PRODUCTION\IND\923100_002_R154_003.indd

APPENDIX A

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

TECHNICAL MEMORANDUM

DATE September 16, 2022 **Project No.** GL923-1000-007.2021

TO Bill Kombol
Palmer Coking Coal Company

FROM Gary Zimmerman (Golder Associates) **EMAIL gary.zimmerman@wsp.com**

LANDSBURG MINE SITE JUNE 2022 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 on June 7 through 8, 2022 at the Landsburg Mine Site in Washington (Site) and the Landsburg Estates private well as part of the Landsburg Groundwater sampling project. Samples in the laboratory sample delivery group (SDG) as indicated in Table 1 was reviewed in this DUSR to identify quality issues which could affect the use of the sample data for decision making purposes.

Eleven water samples, one field duplicate sample, one field blank, and two trip blanks were collected by Golder Associates USA 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)
- 1,4-Dioxane following USEPA SW-846 Method 8270E, Semivolatile Organic Compounds by GC/MS
- Northwest Total Petroleum Hydrocarbons – Hydrocarbon Identification Scan by NWTPH-HCID

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 2020a[2]) and Inorganic Review (USEPA 2020b[3]), modified to include method specific requirements of the laboratory, and laboratory standard operating procedures. Where there was a discrepancy

[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] United States Environmental Protection Agency (USEPA). 2020a. National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9240.0-51. EPA-540-R-20-005, November.

[3] USEPA. 2020b. National Functional Guidelines for Inorganic Superfund Methods Data Review. OLEM 9240.0-66. EPA-542-R-20-006, November.

Golder Associates USA Inc.
18300 NE Union Hill Road, Suite 200, Redmond, Washington, USA 98052 T: +1 425 883-0777 F: +1 425 882-5498

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

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for but was not detected. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

U The analyte was analyzed for but was not detected.

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. 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 results for 2-chloroethyl vinyl ether were rejected (R). 2-chloroethyl vinyl ether was not detected during the June 2022 sampling round and has never been detected at the Site. Other minor data qualifiers were also reported as detailed in Attachment B.

The laboratory analyzed analytes 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved volatile organic analysis (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, except for 2-chloroethyl vinyl ether, the results for which were rejected as noted above. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the June 2022 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% was achieved, which exceeds the QAPP stipulated completeness goal of 90%.

Attachments

Attachment A Tables
Table 1 – Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation June 2022
Table 2 – Qualifier Summary Table Landsburg Mine Water Sampling Investigation June 2022
Attachment B Level 2A Data Validation Checklist

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ATTACHMENT A

Tables

Table 1: Sample Collection and Analysis Summary

Q2 - June 2022

						Analyses/Parameters		
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs (8260D)**	**1,4-Dioxane (8270E-SIM)**	**NWTPH HCID**
22F0134	LMW-2-0622	6/7/2022	22F0134-01	GW	-	X	X	X
22F0134	LMW-2-0622-D	6/7/2022	22F0134-02	GW	FD	X	X	X
22F0134	LMW-04-0622	6/7/2022	22F0134-03	GW	MS/MSD	X	X	X
22F0134	LMW-10-0622	6/7/2022	22F0134-04	GW	-	X	X	X
22F0134	LMW-13R-0622	6/7/2022	22F0134-05	GW	-	X	X	X
22F0134	LMW-FB-0622	6/7/2022	22F0134-06	WQ	FB	X	X	X
22F0134	Trip Blank	6/8/2022	22F0134-07	WQ	TB	X	-	-
22F0147	LMW-12-0622	6/8/2022	22F0147-01	GW	-	X	X	X
22F0147	LMW-20-0622	6/8/2022	22F0147-02	GW	-	-	-	X
22F0147	LMW-21-0622	6/8/2022	22F0147-03	GW	-	-	-	X
22F0147	LMW-22-0622	6/8/2022	22F0147-04	GW	-	-	-	X
22F0147	TRIP BLANK	6/8/2022	22F0147-05	WQ	TB	X	-	-

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

Abbreviations:
GW: Groundwater
WQ: Water quality
VOCs: Volatile Organic Compounds
SIM: Selective Ion Monitoring
EPA: Environmental Protection Agency
NWTPH: Northwest Total Petroleum Hydrocarbons
HCID: Hydrocarbon Identification
MS/MSD- Matrix Spike/Matrix Spike Duplicate
FB-Field Blank
TB-Trip Blank

Table 2: Qualifier Summary Table

Q2 - June 2022

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
22F0134	LMW-04-0622	2-chloroethyl vinyl ether	--	--	--	R	No recovery in MS/MSD, improper preservation
22F0134	LMW-04-0622	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-04-0622	acrylonitrile	--	--	--	UJ	Improper preservation
22F0134	LMW-04-0622	trans-1,4-Dichloro 2-Butene	--	--	--	UJ	MS/MSD and RPD outside QC criteria
22F0134	LMW-2-0622	2-chloroethyl vinyl ether	--	--	--	UJ	Improper preservation
22F0134	LMW-2-0622	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-2-0622	acrylonitrile	--	--	--	UJ	Improper preservation
22F0134	LMW-2-0622-D	2-chloroethyl vinyl ether	--	--	--	UJ	Improper preservation
22F0134	LMW-2-0622-D	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-2-0622-D	acrylonitrile	--	--	--	UJ	Improper preservation
22F0134	LMW-10-0622	2-chloroethyl vinyl ether	--	--	--	UJ	Improper preservation
22F0134	LMW-10-0622	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-10-0622	acrylonitrile	--	--	--	UJ	Improper preservation
22F0134	LMW-13R-0622	2-chloroethyl vinyl ether	--	--	--	UJ	Improper preservation
22F0134	LMW-13R-0622	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-13R-0622	acrylonitrile	--	--	--	UJ	Improper preservation
22F0134	LMW-13R-0622	acrolein	--	--	--	UJ	Improper preservation
22F0134	LMW-13R-0622	acrylonitrile	--	--	--	UJ	Improper preservation
22F0147	LMW-12-0622	2-chloroethyl vinyl ether	--	--	--	UJ	Improper preservation
22F0147	LMW-12-0622	acrolein	--	--	--	UJ	Improper preservation
22F0147	LMW-12-0622	acrylonitrile	--	--	--	UJ	Improper preservation
All SDGs	All Samples	All Results	--	--	--	--	Laboratory applied U-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

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

ATTACHMENT B

Level 2A Data Validation Checklist

Project Name: Landsburg Groundwater
Project Number/Phase/Task: GL9231000007 2021
Reviewing Company: Golder Associates
Project Manager: Gary Zimmerman
Data Evaluator: Julia Campbell
Data Evaluation Date: June 28,2022
Checked by: Michael Shadle
Review Date: July 14, 2022
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 22F0134, 22F0147

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-20-005, November 2020 and National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA-EPA-542-R-20-006, November 2020

COC and Sample Receipt	**YES**	**NO**	**NA**	**COMMENT**
a) COC complete and correct?	☐	☒		See Note 1
b) COC documents release of custody (signed and dated)?	☒	☐		
c) Field QC types provided (note types)?	☒	☐	☐	FB, TB; See Table 1
d) Did the cooler contents match the COC?	☒	☐		See Note 1
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 RL
e) Were detected concentrations above the calibration range reported by the laboratory?	☐	☒		

Analytical Assessment	**YES**	**NO**	**NA**	**COMMENT**
f) Did the laboratory satisfy the requested sensitivity requirements?	☒	☐		Results were only reported to the RL.

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 2
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?	☒	☐		LMW-04-0622
b) Were proper analytes reported in the MS/MSD?	☒	☐	☐	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☒	☐	See Note 3

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
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)?	☒	☐	☐	
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-2-0622/LMW-2-0622-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**	**COMMENTS**
a) Were there any other technical problems not previously addressed?	☒	☐	
b) Were data acceptable and usable, except where noted?	☒	☐	

Comments/Notes:

1. In SDG 22F0134, there was no trip blank listed, but one is reported and analyzed. It was noted that the laboratory provided this trip blank. It was confirmed with the sampler the trip blank was in the same cooler as the field samples. No further action is required other than to note.

2. Samples for analysis of acrolein and acrylonitrile were collected in preserved VOA vials and the recovery was most likely lost due to the acid-labile nature of said compounds. Following Guidelines and using professional judgment non-detects are qualified 'UJ' and detects are qualified 'J'. See Note ~~4~~ 3 for clarification on 2-chloroethyl vinyl ether.

3. 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 recoveries were greater than the lower control limit and associated sample results were non-detect, data were qualified as estimated (UJ)

   The MS/MSD results for 2-chloroethyl vinyl ether 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-04-0622	SW8260D	2-Chloroethyl vinyl ether	**0/0**	0%	64-120/30
LMW-04-0622	SW8260D	trans-1,4-Dichloro 2-Butene	**20.8/13.1**	45.0	55-129/30

Data qualification: See Table 2.

Definitions:

%R:	Percent Recovery
COC:	Chain of Custody
CRQL:	Contract Required Quantitation Limit
DMC:	Deuterated Monitoring Compound
FB:	Field Blank
HT:	Holding Time
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
QAPP:	Quality Assurance Project Plan
QC:	Quality Control
RL:	Reporting Limit
RPD:	Relative Percent Deviation
SD:	Serial Dilution
SDG:	Sample Delivery Group
TAT:	Turn Around Time
TB:	Trip Blank
TPH:	Total Petroleum Hydrocarbons
VOC:	Volatile Organic Compound

APPENDIX B

Laboratory Analytical Report

Analytical Resources, LLC
Analytical Chemists and Consultants

20 June 2022

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

RE: Landsburg (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)
22F0147	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, LLC

Kelly Bottem, Client Services Manager

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

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 22F0147	Turn-around Requested: STANDARD
ARI Client Company: Golder | WSP	Phone:
Client Contact: Gary Zimmerman + Joseph Xi	
Client Project Name: Landsburg	
Client Project #: GL9231000007.2021	Samplers: Autumn P. + Joseph Xi

Page: 1 of 1

Date: 6/8/22 | Ice Present?

No. of Coolers: | Cooler Temps: 2.0

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

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: WCs select Client List	TPH-HCID	1,4-Dioxane						Notes/Comments
LMW-12-0622	6/8/22	0840	W	11	X	X	X						• Hold TPH for 14 days • Analyze in accordance w/ MSA between Golder + ARI
LMW-20-0622	"	1205	"	2	—		X						
LMW-21-0622	"	1305	"	2	—		X						
LMW-22-0622	"	1055	"	2	—		X						
TRIP BLANK	—	—	W	3	X	—							

Comments/Special Instructions
- Ecology EIM EDD
- Hold TPH Follow-ups.

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)		Orlo Amos		
Printed Name:	Autumn Pearson	Orlo Amos		
Company:	Golder | WSP	ARI		
Date & Time:	6/8/22 14:51	6/8/22 14:49		

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.

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-12-0622	22F0147-01	Water	08-Jun-2022 08:40	08-Jun-2022 14:49
LMW-20-0622	22F0147-02	Water	08-Jun-2022 12:05	08-Jun-2022 14:49
LMW-21-0622	22F0147-03	Water	08-Jun-2022 13:05	08-Jun-2022 14:49
LMW-22-0622	22F0147-04	Water	08-Jun-2022 10:55	08-Jun-2022 14:49
TRIP BLANK	22F0147-05	Water	08-Jun-2022 08:40	08-Jun-2022 14:49

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

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.

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.

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

The blank spike (BS/LCS) percent recoveries 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.

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Glader | Project Name: lands brug

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

Assigned ARI Job No: 22F0147 | 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 14:49 | 2.0

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: 9708

Cooler Accepted by: Orlo Amos | Date: 6/6/22 | Time: 14:49

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: AW | Date: 06/09/22 | Time: 10:23 | Labels checked by: ____

*** 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	20-Jun-2022 11:15

LMW-12-0622

22F0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/08/2022 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 20:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0147-01 B

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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	0.89	ug/L	
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	0.87	ug/L	
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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-12-0622

22F0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/08/2022 08:40
Analyzed: 06/09/2022 20:18

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-12-0622

22F0147-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/08/2022 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 20:18

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*105*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*93.9*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-12-0622

22F0147-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/08/2022 08:40

Instrument: NT6 Analyst: JZ — Analyzed: 06/17/2022 22:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0147-01 H 01

Preparation Batch: BKF0345 — Sample Size: 500 mL

Prepared: 06/14/2022 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	0.7	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*62.3*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-12-0622

22F0147-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/08/2022 08:40

Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 22:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0147-01 F 01

Preparation Batch: BKF0262 — Sample Size: 500 mL

Prepared: 06/13/2022 — 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 %*	*108*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*126*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-20-0622

22F0147-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/08/2022 12:05

Instrument: NT6 Analyst: JZ — Analyzed: 06/17/2022 23:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0147-02 A 01

Preparation Batch: BKF0345 — Sample Size: 500 mL

Prepared: 06/14/2022 — 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 %*	*54.6*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-21-0622

22F0147-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/08/2022 13:05

Instrument: NT6 Analyst: JZ — Analyzed: 06/17/2022 23:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0147-03 A 01

Preparation Batch: BKF0345 — Sample Size: 500 mL

Prepared: 06/14/2022 — 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 %*	*57.4*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

LMW-22-0622

22F0147-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/08/2022 10:55

Instrument: NT6 Analyst: JZ — Analyzed: 06/17/2022 23:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0147-04 A 01

Preparation Batch: BKF0345 — Sample Size: 500 mL

Prepared: 06/14/2022 — 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 %*	*56.6*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

TRIP BLANK

22F0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/08/2022 08:40

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 17:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0147-05 B

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

TRIP BLANK

22F0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/08/2022 08:40
Analyzed: 06/09/2022 17:43

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

TRIP BLANK

22F0147-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/08/2022 08:40
Analyzed: 06/09/2022 17:43

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*102*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58						
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	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)			Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58							
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	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.93		ug/L	*5.00*		*98.6*	*80-129*			
Surrogate: Toluene-d8	4.99		ug/L	*5.00*		*99.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98		ug/L	*5.00*		*99.6*	*80-120*			
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
Chloromethane	9.04	0.50	ug/L	10.0		90.4	60-138			
Vinyl Chloride	9.20	0.10	ug/L	10.0		92.0	66-133			
Bromomethane	8.99	1.00	ug/L	10.0		89.9	72-131			
Chloroethane	9.07	0.20	ug/L	10.0		90.7	60-155			
Trichlorofluoromethane	9.08	0.20	ug/L	10.0		90.8	62-141			
Acrolein	45.9	5.00	ug/L	50.0		91.9	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.43	0.20	ug/L	10.0		94.3	76-129			
Acetone	44.7	5.00	ug/L	50.0		89.4	58-142			
1,1-Dichloroethene	8.94	0.20	ug/L	10.0		89.4	69-135			
Iodomethane	8.77	1.00	ug/L	10.0		87.7	56-147			
Methylene Chloride	8.84	1.00	ug/L	10.0		88.4	65-135			
Acrylonitrile	9.13	1.00	ug/L	10.0		91.3	64-134			
Carbon Disulfide	9.08	0.20	ug/L	10.0		90.8	78-125			
trans-1,2-Dichloroethene	8.80	0.20	ug/L	10.0		88.0	78-128			
Vinyl Acetate	9.48	0.20	ug/L	10.0		94.8	55-138			
1,1-Dichloroethane	9.01	0.20	ug/L	10.0		90.1	76-124			
2-Butanone	46.6	5.00	ug/L	50.0		93.2	61-140			
2,2-Dichloropropane	9.09	0.20	ug/L	10.0		90.9	66-147			
cis-1,2-Dichloroethene	9.23	0.20	ug/L	10.0		92.3	80-121			
Chloroform	8.92	0.20	ug/L	10.0		89.2	80-122			
Bromochloromethane	8.94	0.20	ug/L	10.0		89.4	80-121			
1,1,1-Trichloroethane	9.20	0.20	ug/L	10.0		92.0	79-123			
1,1-Dichloropropene	8.84	0.10	ug/L	10.0		88.4	80-127			
Carbon tetrachloride	9.40	0.20	ug/L	10.0		94.0	53-137			
1,2-Dichloroethane	9.30	0.20	ug/L	10.0		93.0	75-123			
Benzene	9.27	0.20	ug/L	10.0		92.7	80-120			
Trichloroethene	9.20	0.20	ug/L	10.0		92.0	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	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
1,2-Dichloropropane	9.21	0.20	ug/L	10.0		92.1	80-120			
Bromodichloromethane	9.35	0.20	ug/L	10.0		93.5	80-121			
Dibromomethane	9.13	0.20	ug/L	10.0		91.3	80-120			
2-Chloroethyl vinyl ether	9.30	1.00	ug/L	10.0		93.0	64-120			
4-Methyl-2-Pentanone	47.0	2.50	ug/L	50.0		94.1	67-133			
cis-1,3-Dichloropropene	9.50	0.20	ug/L	10.0		95.0	80-124			
Toluene	9.21	0.20	ug/L	10.0		92.1	80-120			
trans-1,3-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	71-127			
2-Hexanone	46.7	5.00	ug/L	50.0		93.3	69-133			
1,1,2-Trichloroethane	8.94	0.20	ug/L	10.0		89.4	80-121			
1,3-Dichloropropane	8.87	0.10	ug/L	10.0		88.7	80-120			
Tetrachloroethene	9.03	0.20	ug/L	10.0		90.3	80-120			
Dibromochloromethane	9.56	0.20	ug/L	10.0		95.6	65-135			
1,2-Dibromoethane	9.18	0.10	ug/L	10.0		91.8	80-121			
Chlorobenzene	9.33	0.20	ug/L	10.0		93.3	80-120			
Ethylbenzene	9.09	0.20	ug/L	10.0		90.9	80-120			
1,1,1,2-Tetrachloroethane	9.78	0.20	ug/L	10.0		97.8	80-120			
m,p-Xylene	19.0	0.40	ug/L	20.0		95.0	80-121			
o-Xylene	9.37	0.20	ug/L	10.0		93.7	80-121			
Xylenes, total	28.4	0.60	ug/L	30.0		94.6	76-127			
Styrene	9.85	0.20	ug/L	10.0		98.5	80-124			
Bromoform	9.66	0.20	ug/L	10.0		96.6	51-134			
1,1,2,2-Tetrachloroethane	9.24	0.20	ug/L	10.0		92.4	77-123			
1,2,3-Trichloropropane	9.21	0.25	ug/L	10.0		92.1	76-125			
trans-1,4-Dichloro 2-Butene	9.08	1.00	ug/L	10.0		90.8	55-129			
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130			
Bromobenzene	9.29	0.20	ug/L	10.0		92.9	80-120			
Isopropyl Benzene	9.86	0.20	ug/L	10.0		98.6	80-128			
2-Chlorotoluene	9.72	0.10	ug/L	10.0		97.2	78-122			
4-Chlorotoluene	9.38	0.20	ug/L	10.0		93.8	80-121			
t-Butylbenzene	9.80	0.20	ug/L	10.0		98.0	78-125			
1,3,5-Trimethylbenzene	9.93	0.20	ug/L	10.0		99.3	80-129			
1,2,4-Trimethylbenzene	9.79	0.20	ug/L	10.0		97.9	80-127			
s-Butylbenzene	10.0	0.20	ug/L	10.0		100	78-129			
4-Isopropyl Toluene	9.98	0.20	ug/L	10.0		99.8	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	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
1,3-Dichlorobenzene	9.52	0.20	ug/L	10.0		95.2	80-120			
1,4-Dichlorobenzene	9.70	0.20	ug/L	10.0		97.0	80-120			
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129			
1,2-Dichlorobenzene	9.35	0.20	ug/L	10.0		93.5	80-120			
1,2-Dibromo-3-chloropropane	8.36	0.50	ug/L	10.0		83.6	62-123			
1,2,4-Trichlorobenzene	9.83	0.50	ug/L	10.0		98.3	64-124			
Hexachloro-1,3-Butadiene	9.48	0.50	ug/L	10.0		94.8	58-123			
Naphthalene	9.88	0.50	ug/L	10.0		98.8	50-134			
1,2,3-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	49-133			
Dichlorodifluoromethane	8.96	0.20	ug/L	10.0		89.6	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.86		ug/L	*5.00*		*97.3*	*80-129*			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Chloromethane	9.83	0.50	ug/L	10.0		98.3	60-138	8.45	30	
Vinyl Chloride	9.97	0.10	ug/L	10.0		99.7	66-133	8.11	30	
Bromomethane	9.58	1.00	ug/L	10.0		95.8	72-131	6.27	30	
Chloroethane	9.32	0.20	ug/L	10.0		93.2	60-155	2.76	30	
Trichlorofluoromethane	9.46	0.20	ug/L	10.0		94.6	62-141	4.11	30	
Acrolein	52.5	5.00	ug/L	50.0		105	52-190	13.40	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.68	0.20	ug/L	10.0		96.8	76-129	2.52	30	
Acetone	48.2	5.00	ug/L	50.0		96.4	58-142	7.59	30	
1,1-Dichloroethene	9.64	0.20	ug/L	10.0		96.4	69-135	7.47	30	
Iodomethane	9.66	1.00	ug/L	10.0		96.6	56-147	9.71	30	
Methylene Chloride	9.42	1.00	ug/L	10.0		94.2	65-135	6.30	30	
Acrylonitrile	9.47	1.00	ug/L	10.0		94.7	64-134	3.64	30	
Carbon Disulfide	9.59	0.20	ug/L	10.0		95.9	78-125	5.47	30	
trans-1,2-Dichloroethene	9.19	0.20	ug/L	10.0		91.9	78-128	4.36	30	
Vinyl Acetate	10.3	0.20	ug/L	10.0		103	55-138	8.55	30	
1,1-Dichloroethane	9.74	0.20	ug/L	10.0		97.4	76-124	7.75	30	
2-Butanone	51.5	5.00	ug/L	50.0		103	61-140	9.95	30	
2,2-Dichloropropane	9.65	0.20	ug/L	10.0		96.5	66-147	6.00	30	
cis-1,2-Dichloroethene	9.77	0.20	ug/L	10.0		97.7	80-121	5.71	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Chloroform	9.63	0.20	ug/L	10.0		96.3	80-122	7.64	30	
Bromochloromethane	9.77	0.20	ug/L	10.0		97.7	80-121	8.86	30	
1,1,1-Trichloroethane	9.38	0.20	ug/L	10.0		93.8	79-123	1.99	30	
1,1-Dichloropropene	9.08	0.10	ug/L	10.0		90.8	80-127	2.64	30	
Carbon tetrachloride	9.86	0.20	ug/L	10.0		98.6	53-137	4.72	30	
1,2-Dichloroethane	9.24	0.20	ug/L	10.0		92.4	75-123	0.62	30	
Benzene	9.51	0.20	ug/L	10.0		95.1	80-120	2.58	30	
Trichloroethene	9.20	0.20	ug/L	10.0		92.0	80-120	0.00		
1,2-Dichloropropane	9.28	0.20	ug/L	10.0		92.8	80-120	0.76	30	
Bromodichloromethane	9.38	0.20	ug/L	10.0		93.8	80-121	0.36	30	
Dibromomethane	9.46	0.20	ug/L	10.0		94.6	80-120	3.56	30	
2-Chloroethyl vinyl ether	9.62	1.00	ug/L	10.0		96.2	64-120	3.30	30	
4-Methyl-2-Pentanone	49.3	2.50	ug/L	50.0		98.6	67-133	4.72	30	
cis-1,3-Dichloropropene	9.73	0.20	ug/L	10.0		97.3	80-124	2.35	30	
Toluene	9.36	0.20	ug/L	10.0		93.6	80-120	1.61	30	
trans-1,3-Dichloropropene	9.65	0.20	ug/L	10.0		96.5	71-127	1.99	30	
2-Hexanone	50.3	5.00	ug/L	50.0		101	69-133	7.41	30	
1,1,2-Trichloroethane	9.56	0.20	ug/L	10.0		95.6	80-121	6.69	30	
1,3-Dichloropropane	9.27	0.10	ug/L	10.0		92.7	80-120	4.35	30	
Tetrachloroethene	9.54	0.20	ug/L	10.0		95.4	80-120	5.45	30	
Dibromochloromethane	10.0	0.20	ug/L	10.0		100	65-135	4.55	30	
1,2-Dibromoethane	9.47	0.10	ug/L	10.0		94.7	80-121	3.12	30	
Chlorobenzene	9.46	0.20	ug/L	10.0		94.6	80-120	1.33	30	
Ethylbenzene	9.61	0.20	ug/L	10.0		96.1	80-120	5.57	30	
1,1,1,2-Tetrachloroethane	10.0	0.20	ug/L	10.0		100	80-120	2.58	30	
m,p-Xylene	19.6	0.40	ug/L	20.0		97.9	80-121	3.04	30	
o-Xylene	9.53	0.20	ug/L	10.0		95.3	80-121	1.75	30	
Xylenes, total	29.1	0.60	ug/L	30.0		97.1	76-127	2.62	30	
Styrene	10.3	0.20	ug/L	10.0		103	80-124	4.21	30	
Bromoform	9.90	0.20	ug/L	10.0		99.0	51-134	2.44	30	
1,1,2,2-Tetrachloroethane	9.74	0.20	ug/L	10.0		97.4	77-123	5.26	30	
1,2,3-Trichloropropane	9.79	0.25	ug/L	10.0		97.9	76-125	6.05	30	
trans-1,4-Dichloro 2-Butene	9.49	1.00	ug/L	10.0		94.9	55-129	4.41	30	
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130	0.02	30	
Bromobenzene	9.64	0.20	ug/L	10.0		96.4	80-120	3.69	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Isopropyl Benzene	9.83	0.20	ug/L	10.0		98.3	80-128	0.29	30	
2-Chlorotoluene	9.63	0.10	ug/L	10.0		96.3	78-122	0.91	30	
4-Chlorotoluene	9.68	0.20	ug/L	10.0		96.8	80-121	3.09	30	
t-Butylbenzene	9.67	0.20	ug/L	10.0		96.7	78-125	1.24	30	
1,3,5-Trimethylbenzene	9.86	0.20	ug/L	10.0		98.6	80-129	0.78	30	
1,2,4-Trimethylbenzene	9.78	0.20	ug/L	10.0		97.8	80-127	0.10	30	
s-Butylbenzene	9.81	0.20	ug/L	10.0		98.1	78-129	2.18	30	
4-Isopropyl Toluene	9.85	0.20	ug/L	10.0		98.5	79-130	1.29	30	
1,3-Dichlorobenzene	9.74	0.20	ug/L	10.0		97.4	80-120	2.28	30	
1,4-Dichlorobenzene	9.68	0.20	ug/L	10.0		96.8	80-120	0.20	30	
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129	0.09	30	
1,2-Dichlorobenzene	9.75	0.20	ug/L	10.0		97.5	80-120	4.24	30	
1,2-Dibromo-3-chloropropane	8.88	0.50	ug/L	10.0		88.8	62-123	6.11	30	
1,2,4-Trichlorobenzene	9.93	0.50	ug/L	10.0		99.3	64-124	1.02	30	
Hexachloro-1,3-Butadiene	9.63	0.50	ug/L	10.0		96.3	58-123	1.56	30	
Naphthalene	10.2	0.50	ug/L	10.0		102	50-134	3.63	30	
1,2,3-Trichlorobenzene	9.95	0.50	ug/L	10.0		99.5	49-133	0.54	30	
Dichlorodifluoromethane	9.77	0.20	ug/L	10.0		97.7	48-147	8.62	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*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	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BKF0345 - 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 (BKF0345-BLK1)				Prepared: 14-Jun-2022	Analyzed: 17-Jun-2022 21:24					
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	6.13		ug/L	*10.0*		*61.3*	*33.6-120*			
LCS (BKF0345-BS1)				Prepared: 14-Jun-2022	Analyzed: 17-Jun-2022 21:49					
1,4-Dioxane	8.0	0.4	ug/L	10.0		80.0	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.23		ug/L	*10.0*		*62.3*	*33.6-120*			
LCS Dup (BKF0345-BSD1)				Prepared: 14-Jun-2022	Analyzed: 17-Jun-2022 22:15					
1,4-Dioxane	8.7	0.4	ug/L	10.0		87.2	39.9-120	8.65	30	
Surrogate: 1,4-Dioxane-d8	6.84		ug/L	*10.0*		*68.4*	*33.6-120*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BKF0262 - EPA 3510C SepF

Instrument: FID4 Analyst: AA/CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0262-BLK1)			Prepared: 13-Jun-2022 Analyzed: 13-Jun-2022 21:43							
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	0.237		mg/L	*0.225*		*105*	*50-150*			
Surrogate: n-Triacontane	0.263		mg/L	*0.225*		*117*	*50-150*			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	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	20-Jun-2022 11:15

2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

EPA 8270E-SIM in Water

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

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	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	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:15

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.

Analytical Resources, LLC
Analytical Chemists and Consultants

20 June 2022

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

RE: Landsburg (GL92310W007.2021)

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)
22F0134	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, LLC

Kelly Bottem, Client Services Manager

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

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 22F0134	Turn-around Requested: STD
ARI Client Company: Golder	Phone: 425 883 0777
Client Contact: Gary Zimmerman + Joseph Xi	
Client Project Name: Landsburg	
Client Project #: G1923(WO07.2021	Samplers: Joseph Xi + Autumn Pearson

Page: 1 of 1	
Date: 6/7/22	Ice Present?
No. of Coolers:	Cooler Temps:

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

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs (Client List)	TPH-HCID	1,4-Dioxane						Notes/Comments
LMW-2-0622	6/7/22	1000	W	11	X	X	X						• Hold TPH follow ups • Analyze in accordance w/ MSA between Golder + ARI
LMW-2-0622-D		1010		11									
LMW-4-0622		1125		33									MS+MSD collected
LMW-10-0622		1300		11									
LMW-13R-0622		1400		11									
LMW-FB-0622		1355		11									

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
• Ecology EIM EDD • Hold Follow ups	Printed Name: Autumn Pearson	Printed Name: Orlo Amos	Printed Name:	Printed Name:
	Company: Golder/WSP	Company: ARI	Company:	Company:
	Date & Time: 6/7/22 15:37	Date & Time: 6/7/22 15:38	Date & Time:	Date & Time:

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-2-0622	22F0134-01	Water	07-Jun-2022 10:00	07-Jun-2022 15:38
LMW-2-0622-D	22F0134-02	Water	07-Jun-2022 10:10	07-Jun-2022 15:38
LMW-04-0622	22F0134-03	Water	07-Jun-2022 11:25	07-Jun-2022 15:38
LMW-10-0622	22F0134-04	Water	07-Jun-2022 13:00	07-Jun-2022 15:38
LMW-13R-0622	22F0134-05	Water	07-Jun-2022 14:00	07-Jun-2022 15:38
LMW-FB-0622	22F0134-06	Water	07-Jun-2022 13:55	07-Jun-2022 15:38
Trip Blank	22F0134-07	Water	07-Jun-2022 10:00	07-Jun-2022 15:38

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

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.

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.

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.

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.

Golder Associates	Project:	Landsburg	
18300 NE Union Hill Road Suite 200	Project Number:	GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager:	Gary Zimmerman	20-Jun-2022 11:18

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

Analytical Resources, LLC
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder Project Name: Landsburg

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

Assigned ARI Job No: 22F0134 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 1543 4.0 3.9 2.0 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 9708

Cooler Accepted by: Carlo Amor Date: 6/7/22 Time: 15:43

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	06/01/2022	

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

Samples Logged by: [signature] Date: 06/08/2022 Time: 1500 Labels checked by: SLF

** ***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: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622

22F0134-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 10:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 18:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-01 E

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622

22F0134-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 10:00
Analyzed: 06/09/2022 18:27

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622

22F0134-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 10:00
Analyzed: 06/09/2022 18:27

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*101*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*97.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*97.8*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622

22F0134-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 10:00
Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 01:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-01 G 01
Preparation Batch: BKF0230 — Sample Size: 500 mL
Prepared: 06/13/2022 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.2	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*63.9*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622

22F0134-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 10:00
Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 19:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-01 F 01
Preparation Batch: BKF0223 — Sample Size: 500 mL
Prepared: 06/10/2022 — 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 %*	*116*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622-D

22F0134-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 10:10

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 18:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-02 D

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622-D

22F0134-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 10:10
Analyzed: 06/09/2022 18:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622-D

22F0134-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 10:10

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 18:49

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*99.3*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*97.0*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622-D

22F0134-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 10:10

Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 02:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-02 G 01

Preparation Batch: BKF0230 — Sample Size: 500 mL

Prepared: 06/13/2022 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.2	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*63.1*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-2-0622-D

22F0134-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 10:10

Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 19:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-02 F 01

Preparation Batch: BKF0223 — Sample Size: 500 mL

Prepared: 06/10/2022 — 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 %*	*103*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*116*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-04-0622

22F0134-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 11:25

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 19:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-03 C

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-04-0622

22F0134-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 11:25
Analyzed: 06/09/2022 19:11

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-04-0622

22F0134-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 11:25
Analyzed: 06/09/2022 19:11

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.8*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-04-0622

22F0134-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 11:25

Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 02:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-03 AD 01

Preparation Batch: BKF0230 — Sample Size: 500 mL

Prepared: 06/13/2022 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.2	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*65.0*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-04-0622

22F0134-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 11:25

Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 19:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-03 AA 01

Preparation Batch: BKF0223 — Sample Size: 500 mL

Prepared: 06/10/2022 — 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 %*	*119*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-10-0622

22F0134-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 13:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 19:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-04 D

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-10-0622

22F0134-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 13:00
Analyzed: 06/09/2022 19:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-10-0622

22F0134-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 13:00
Analyzed: 06/09/2022 19:33

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*98.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*99.5*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
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LMW-10-0622

22F0134-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 13:00
Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 03:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-04 G 01
Preparation Batch: BKF0230 — Sample Size: 500 mL
Prepared: 06/13/2022 — 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 %*	*68.7*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-10-0622

22F0134-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 13:00
Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 20:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-04 F 01
Preparation Batch: BKF0223 — Sample Size: 500 mL
Prepared: 06/10/2022 — 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 %*	*104*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*123*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-13R-0622

22F0134-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 14:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 19:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-05 B

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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	0.39	ug/L	
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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-13R-0622

22F0134-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 14:00
Analyzed: 06/09/2022 19:56

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-13R-0622

22F0134-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 14:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 19:56

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*99.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-13R-0622

22F0134-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 14:00

Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 04:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-05 G 01

Preparation Batch: BKF0230 — Sample Size: 500 mL

Prepared: 06/13/2022 — 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 %*	*60.4*	*%*	

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-13R-0622

22F0134-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 14:00
Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 21:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-05 F 01
Preparation Batch: BKF0223 — Sample Size: 500 mL
Prepared: 06/10/2022 — 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 %*	*98.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*119*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-FB-0622

22F0134-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 13:55

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 18:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-06 B

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-FB-0622

22F0134-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 13:55
Analyzed: 06/09/2022 18:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-FB-0622

22F0134-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 13:55
Analyzed: 06/09/2022 18:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*100*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*103*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*101*	*%*	

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-FB-0622

22F0134-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 06/07/2022 13:55

Instrument: NT6 Analyst: JZ — Analyzed: 06/18/2022 04:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 22F0134-06 G 01

Preparation Batch: BKF0230 — Sample Size: 500 mL

Prepared: 06/13/2022 — 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 %*	*58.8*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

LMW-FB-0622

22F0134-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 06/07/2022 13:55
Instrument: FID4 Analyst: AA — Analyzed: 06/13/2022 21:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 22F0134-06 F 01
Preparation Batch: BKF0223 — Sample Size: 500 mL
Prepared: 06/10/2022 — 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 %*	*99.4*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*112*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Trip Blank

22F0134-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 10:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 17:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 22F0134-07 A

Preparation Batch: BKF0247 — Sample Size: 10 mL

Prepared: 06/09/2022 — 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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Trip Blank

22F0134-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT3 Analyst: PKC

Sampled: 06/07/2022 10:00
Analyzed: 06/09/2022 17:20

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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	0.25	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

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Analytical Report

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Trip Blank

22F0134-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 06/07/2022 10:00

Instrument: NT3 Analyst: PKC — Analyzed: 06/09/2022 17:20

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			*80-129 %*	*96.2*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)			Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58							
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: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)			Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58							
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: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0247-BLK1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 16:58						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.93		ug/L	*5.00*		*98.6*	*80-129*			
Surrogate: Toluene-d8	4.99		ug/L	*5.00*		*99.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.06		ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98		ug/L	*5.00*		*99.6*	*80-120*			
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
Chloromethane	9.04	0.50	ug/L	10.0		90.4	60-138			
Vinyl Chloride	9.20	0.10	ug/L	10.0		92.0	66-133			
Bromomethane	8.99	1.00	ug/L	10.0		89.9	72-131			
Chloroethane	9.07	0.20	ug/L	10.0		90.7	60-155			
Trichlorofluoromethane	9.08	0.20	ug/L	10.0		90.8	62-141			
Acrolein	45.9	5.00	ug/L	50.0		91.9	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.43	0.20	ug/L	10.0		94.3	76-129			
Acetone	44.7	5.00	ug/L	50.0		89.4	58-142			
1,1-Dichloroethene	8.94	0.20	ug/L	10.0		89.4	69-135			
Iodomethane	8.77	1.00	ug/L	10.0		87.7	56-147			
Methylene Chloride	8.84	1.00	ug/L	10.0		88.4	65-135			
Acrylonitrile	9.13	1.00	ug/L	10.0		91.3	64-134			
Carbon Disulfide	9.08	0.20	ug/L	10.0		90.8	78-125			
trans-1,2-Dichloroethene	8.80	0.20	ug/L	10.0		88.0	78-128			
Vinyl Acetate	9.48	0.20	ug/L	10.0		94.8	55-138			
1,1-Dichloroethane	9.01	0.20	ug/L	10.0		90.1	76-124			
2-Butanone	46.6	5.00	ug/L	50.0		93.2	61-140			
2,2-Dichloropropane	9.09	0.20	ug/L	10.0		90.9	66-147			
cis-1,2-Dichloroethene	9.23	0.20	ug/L	10.0		92.3	80-121			
Chloroform	8.92	0.20	ug/L	10.0		89.2	80-122			
Bromochloromethane	8.94	0.20	ug/L	10.0		89.4	80-121			
1,1,1-Trichloroethane	9.20	0.20	ug/L	10.0		92.0	79-123			
1,1-Dichloropropene	8.84	0.10	ug/L	10.0		88.4	80-127			
Carbon tetrachloride	9.40	0.20	ug/L	10.0		94.0	53-137			
1,2-Dichloroethane	9.30	0.20	ug/L	10.0		93.0	75-123			
Benzene	9.27	0.20	ug/L	10.0		92.7	80-120			
Trichloroethene	9.20	0.20	ug/L	10.0		92.0	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
1,2-Dichloropropane	9.21	0.20	ug/L	10.0		92.1	80-120			
Bromodichloromethane	9.35	0.20	ug/L	10.0		93.5	80-121			
Dibromomethane	9.13	0.20	ug/L	10.0		91.3	80-120			
2-Chloroethyl vinyl ether	9.30	1.00	ug/L	10.0		93.0	64-120			
4-Methyl-2-Pentanone	47.0	2.50	ug/L	50.0		94.1	67-133			
cis-1,3-Dichloropropene	9.50	0.20	ug/L	10.0		95.0	80-124			
Toluene	9.21	0.20	ug/L	10.0		92.1	80-120			
trans-1,3-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	71-127			
2-Hexanone	46.7	5.00	ug/L	50.0		93.3	69-133			
1,1,2-Trichloroethane	8.94	0.20	ug/L	10.0		89.4	80-121			
1,3-Dichloropropane	8.87	0.10	ug/L	10.0		88.7	80-120			
Tetrachloroethene	9.03	0.20	ug/L	10.0		90.3	80-120			
Dibromochloromethane	9.56	0.20	ug/L	10.0		95.6	65-135			
1,2-Dibromoethane	9.18	0.10	ug/L	10.0		91.8	80-121			
Chlorobenzene	9.33	0.20	ug/L	10.0		93.3	80-120			
Ethylbenzene	9.09	0.20	ug/L	10.0		90.9	80-120			
1,1,1,2-Tetrachloroethane	9.78	0.20	ug/L	10.0		97.8	80-120			
m,p-Xylene	19.0	0.40	ug/L	20.0		95.0	80-121			
o-Xylene	9.37	0.20	ug/L	10.0		93.7	80-121			
Xylenes, total	28.4	0.60	ug/L	30.0		94.6	76-127			
Styrene	9.85	0.20	ug/L	10.0		98.5	80-124			
Bromoform	9.66	0.20	ug/L	10.0		96.6	51-134			
1,1,2,2-Tetrachloroethane	9.24	0.20	ug/L	10.0		92.4	77-123			
1,2,3-Trichloropropane	9.21	0.25	ug/L	10.0		92.1	76-125			
trans-1,4-Dichloro 2-Butene	9.08	1.00	ug/L	10.0		90.8	55-129			
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130			
Bromobenzene	9.29	0.20	ug/L	10.0		92.9	80-120			
Isopropyl Benzene	9.86	0.20	ug/L	10.0		98.6	80-128			
2-Chlorotoluene	9.72	0.10	ug/L	10.0		97.2	78-122			
4-Chlorotoluene	9.38	0.20	ug/L	10.0		93.8	80-121			
t-Butylbenzene	9.80	0.20	ug/L	10.0		98.0	78-125			
1,3,5-Trimethylbenzene	9.93	0.20	ug/L	10.0		99.3	80-129			
1,2,4-Trimethylbenzene	9.79	0.20	ug/L	10.0		97.9	80-127			
s-Butylbenzene	10.0	0.20	ug/L	10.0		100	78-129			
4-Isopropyl Toluene	9.98	0.20	ug/L	10.0		99.8	79-130			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BKF0247-BS1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:30						
1,3-Dichlorobenzene	9.52	0.20	ug/L	10.0		95.2	80-120			
1,4-Dichlorobenzene	9.70	0.20	ug/L	10.0		97.0	80-120			
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129			
1,2-Dichlorobenzene	9.35	0.20	ug/L	10.0		93.5	80-120			
1,2-Dibromo-3-chloropropane	8.36	0.50	ug/L	10.0		83.6	62-123			
1,2,4-Trichlorobenzene	9.83	0.50	ug/L	10.0		98.3	64-124			
Hexachloro-1,3-Butadiene	9.48	0.50	ug/L	10.0		94.8	58-123			
Naphthalene	9.88	0.50	ug/L	10.0		98.8	50-134			
1,2,3-Trichlorobenzene	10.0	0.50	ug/L	10.0		100	49-133			
Dichlorodifluoromethane	8.96	0.20	ug/L	10.0		89.6	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.86		ug/L	*5.00*		*97.3*	*80-129*			
Surrogate: Toluene-d8	5.11		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.09		ug/L	*5.00*		*102*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01		ug/L	*5.00*		*100*	*80-120*			
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Chloromethane	9.83	0.50	ug/L	10.0		98.3	60-138	8.45	30	
Vinyl Chloride	9.97	0.10	ug/L	10.0		99.7	66-133	8.11	30	
Bromomethane	9.58	1.00	ug/L	10.0		95.8	72-131	6.27	30	
Chloroethane	9.32	0.20	ug/L	10.0		93.2	60-155	2.76	30	
Trichlorofluoromethane	9.46	0.20	ug/L	10.0		94.6	62-141	4.11	30	
Acrolein	52.5	5.00	ug/L	50.0		105	52-190	13.40	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.68	0.20	ug/L	10.0		96.8	76-129	2.52	30	
Acetone	48.2	5.00	ug/L	50.0		96.4	58-142	7.59	30	
1,1-Dichloroethene	9.64	0.20	ug/L	10.0		96.4	69-135	7.47	30	
Iodomethane	9.66	1.00	ug/L	10.0		96.6	56-147	9.71	30	
Methylene Chloride	9.42	1.00	ug/L	10.0		94.2	65-135	6.30	30	
Acrylonitrile	9.47	1.00	ug/L	10.0		94.7	64-134	3.64	30	
Carbon Disulfide	9.59	0.20	ug/L	10.0		95.9	78-125	5.47	30	
trans-1,2-Dichloroethene	9.19	0.20	ug/L	10.0		91.9	78-128	4.36	30	
Vinyl Acetate	10.3	0.20	ug/L	10.0		103	55-138	8.55	30	
1,1-Dichloroethane	9.74	0.20	ug/L	10.0		97.4	76-124	7.75	30	
2-Butanone	51.5	5.00	ug/L	50.0		103	61-140	9.95	30	
2,2-Dichloropropane	9.65	0.20	ug/L	10.0		96.5	66-147	6.00	30	
cis-1,2-Dichloroethene	9.77	0.20	ug/L	10.0		97.7	80-121	5.71	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Chloroform	9.63	0.20	ug/L	10.0		96.3	80-122	7.64	30	
Bromochloromethane	9.77	0.20	ug/L	10.0		97.7	80-121	8.86	30	
1,1,1-Trichloroethane	9.38	0.20	ug/L	10.0		93.8	79-123	1.99	30	
1,1-Dichloropropene	9.08	0.10	ug/L	10.0		90.8	80-127	2.64	30	
Carbon tetrachloride	9.86	0.20	ug/L	10.0		98.6	53-137	4.72	30	
1,2-Dichloroethane	9.24	0.20	ug/L	10.0		92.4	75-123	0.62	30	
Benzene	9.51	0.20	ug/L	10.0		95.1	80-120	2.58	30	
Trichloroethene	9.20	0.20	ug/L	10.0		92.0	80-120	0.00		
1,2-Dichloropropane	9.28	0.20	ug/L	10.0		92.8	80-120	0.76	30	
Bromodichloromethane	9.38	0.20	ug/L	10.0		93.8	80-121	0.36	30	
Dibromomethane	9.46	0.20	ug/L	10.0		94.6	80-120	3.56	30	
2-Chloroethyl vinyl ether	9.62	1.00	ug/L	10.0		96.2	64-120	3.30	30	
4-Methyl-2-Pentanone	49.3	2.50	ug/L	50.0		98.6	67-133	4.72	30	
cis-1,3-Dichloropropene	9.73	0.20	ug/L	10.0		97.3	80-124	2.35	30	
Toluene	9.36	0.20	ug/L	10.0		93.6	80-120	1.61	30	
trans-1,3-Dichloropropene	9.65	0.20	ug/L	10.0		96.5	71-127	1.99	30	
2-Hexanone	50.3	5.00	ug/L	50.0		101	69-133	7.41	30	
1,1,2-Trichloroethane	9.56	0.20	ug/L	10.0		95.6	80-121	6.69	30	
1,3-Dichloropropane	9.27	0.10	ug/L	10.0		92.7	80-120	4.35	30	
Tetrachloroethene	9.54	0.20	ug/L	10.0		95.4	80-120	5.45	30	
Dibromochloromethane	10.0	0.20	ug/L	10.0		100	65-135	4.55	30	
1,2-Dibromoethane	9.47	0.10	ug/L	10.0		94.7	80-121	3.12	30	
Chlorobenzene	9.46	0.20	ug/L	10.0		94.6	80-120	1.33	30	
Ethylbenzene	9.61	0.20	ug/L	10.0		96.1	80-120	5.57	30	
1,1,1,2-Tetrachloroethane	10.0	0.20	ug/L	10.0		100	80-120	2.58	30	
m,p-Xylene	19.6	0.40	ug/L	20.0		97.9	80-121	3.04	30	
o-Xylene	9.53	0.20	ug/L	10.0		95.3	80-121	1.75	30	
Xylenes, total	29.1	0.60	ug/L	30.0		97.1	76-127	2.62	30	
Styrene	10.3	0.20	ug/L	10.0		103	80-124	4.21	30	
Bromoform	9.90	0.20	ug/L	10.0		99.0	51-134	2.44	30	
1,1,2,2-Tetrachloroethane	9.74	0.20	ug/L	10.0		97.4	77-123	5.26	30	
1,2,3-Trichloropropane	9.79	0.25	ug/L	10.0		97.9	76-125	6.05	30	
trans-1,4-Dichloro 2-Butene	9.49	1.00	ug/L	10.0		94.9	55-129	4.41	30	
n-Propylbenzene	9.82	0.20	ug/L	10.0		98.2	78-130	0.02	30	
Bromobenzene	9.64	0.20	ug/L	10.0		96.4	80-120	3.69	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BKF0247-BSD1)				Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 15:52						
Isopropyl Benzene	9.83	0.20	ug/L	10.0		98.3	80-128	0.29	30	
2-Chlorotoluene	9.63	0.10	ug/L	10.0		96.3	78-122	0.91	30	
4-Chlorotoluene	9.68	0.20	ug/L	10.0		96.8	80-121	3.09	30	
t-Butylbenzene	9.67	0.20	ug/L	10.0		96.7	78-125	1.24	30	
1,3,5-Trimethylbenzene	9.86	0.20	ug/L	10.0		98.6	80-129	0.78	30	
1,2,4-Trimethylbenzene	9.78	0.20	ug/L	10.0		97.8	80-127	0.10	30	
s-Butylbenzene	9.81	0.20	ug/L	10.0		98.1	78-129	2.18	30	
4-Isopropyl Toluene	9.85	0.20	ug/L	10.0		98.5	79-130	1.29	30	
1,3-Dichlorobenzene	9.74	0.20	ug/L	10.0		97.4	80-120	2.28	30	
1,4-Dichlorobenzene	9.68	0.20	ug/L	10.0		96.8	80-120	0.20	30	
n-Butylbenzene	10.1	0.20	ug/L	10.0		101	74-129	0.09	30	
1,2-Dichlorobenzene	9.75	0.20	ug/L	10.0		97.5	80-120	4.24	30	
1,2-Dibromo-3-chloropropane	8.88	0.50	ug/L	10.0		88.8	62-123	6.11	30	
1,2,4-Trichlorobenzene	9.93	0.50	ug/L	10.0		99.3	64-124	1.02	30	
Hexachloro-1,3-Butadiene	9.63	0.50	ug/L	10.0		96.3	58-123	1.56	30	
Naphthalene	10.2	0.50	ug/L	10.0		102	50-134	3.63	30	
1,2,3-Trichlorobenzene	9.95	0.50	ug/L	10.0		99.5	49-133	0.54	30	
Dichlorodifluoromethane	9.77	0.20	ug/L	10.0		97.7	48-147	8.62	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03		ug/L	*5.00*		*101*	*80-120*			
Matrix Spike (BKF0247-MS1)	**Source: 22F0134-03**			Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 20:40						
Chloromethane	10.2	0.50	ug/L	10.0	ND	102	60-138			
Vinyl Chloride	9.61	0.10	ug/L	10.0	ND	96.1	66-133			
Bromomethane	9.66	1.00	ug/L	10.0	ND	96.6	72-131			
Chloroethane	9.72	0.20	ug/L	10.0	ND	97.2	60-155			
Trichlorofluoromethane	9.29	0.20	ug/L	10.0	ND	92.9	62-141			
Acrolein	53.0	5.00	ug/L	50.0	ND	106	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.98	0.20	ug/L	10.0	ND	89.8	76-129			
Acetone	53.5	5.00	ug/L	50.0	ND	107	58-142			
1,1-Dichloroethene	9.82	0.20	ug/L	10.0	ND	98.2	69-135			
Iodomethane	10.0	1.00	ug/L	10.0	ND	100	56-147			
Methylene Chloride	9.40	1.00	ug/L	10.0	ND	94.0	65-135			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BKF0247-MS1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 20:40							
Acrylonitrile	10.9	1.00	ug/L	10.0	ND	109	64-134			
Carbon Disulfide	9.64	0.20	ug/L	10.0	ND	96.4	78-125			
trans-1,2-Dichloroethene	9.77	0.20	ug/L	10.0	ND	97.7	78-128			
Vinyl Acetate	9.67	0.20	ug/L	10.0	ND	96.7	55-138			
1,1-Dichloroethane	10.0	0.20	ug/L	10.0	ND	100	76-124			
2-Butanone	53.7	5.00	ug/L	50.0	ND	107	61-140			
2,2-Dichloropropane	9.54	0.20	ug/L	10.0	ND	95.4	66-147			
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0	ND	101	80-121			
Chloroform	10.2	0.20	ug/L	10.0	ND	102	80-122			
Bromochloromethane	9.99	0.20	ug/L	10.0	ND	99.9	80-121			
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0	ND	101	79-123			
1,1-Dichloropropene	9.56	0.10	ug/L	10.0	ND	95.6	80-127			
Carbon tetrachloride	10.0	0.20	ug/L	10.0	ND	100	53-137			
1,2-Dichloroethane	10.3	0.20	ug/L	10.0	ND	103	75-123			
Benzene	10.2	0.20	ug/L	10.0	ND	102	80-120			
Trichloroethene	9.78	0.20	ug/L	10.0	ND	97.8	80-120			
1,2-Dichloropropane	10.1	0.20	ug/L	10.0	ND	101	80-120			
Bromodichloromethane	10.2	0.20	ug/L	10.0	ND	102	80-121			
Dibromomethane	9.90	0.20	ug/L	10.0	ND	99.0	80-120			
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	51.7	2.50	ug/L	50.0	ND	103	67-133			
cis-1,3-Dichloropropene	9.60	0.20	ug/L	10.0	ND	96.0	80-124			
Toluene	10.0	0.20	ug/L	10.0	ND	100	80-120			
trans-1,3-Dichloropropene	9.30	0.20	ug/L	10.0	ND	93.0	71-127			
2-Hexanone	50.8	5.00	ug/L	50.0	ND	102	69-133			
1,1,2-Trichloroethane	9.94	0.20	ug/L	10.0	ND	99.4	80-121			
1,3-Dichloropropane	9.52	0.10	ug/L	10.0	ND	95.2	80-120			
Tetrachloroethene	9.39	0.20	ug/L	10.0	ND	93.9	80-120			
Dibromochloromethane	9.72	0.20	ug/L	10.0	ND	97.2	65-135			
1,2-Dibromoethane	10.3	0.10	ug/L	10.0	ND	103	80-121			
Chlorobenzene	9.95	0.20	ug/L	10.0	ND	99.5	80-120			
Ethylbenzene	9.82	0.20	ug/L	10.0	ND	98.2	80-120			
1,1,1,2-Tetrachloroethane	9.77	0.20	ug/L	10.0	ND	97.7	80-120			
m,p-Xylene	20.2	0.40	ug/L	20.0	ND	101	80-121			
o-Xylene	9.82	0.20	ug/L	10.0	ND	98.2	80-121			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BKF0247-MS1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 20:40							
Xylenes, total	30.0	0.60	ug/L	30.0	ND	99.9	76-127			
Styrene	10.3	0.20	ug/L	10.0	ND	103	80-124			
Bromoform	9.38	0.20	ug/L	10.0	ND	93.8	51-134			
1,1,2,2-Tetrachloroethane	9.91	0.20	ug/L	10.0	ND	99.1	77-123			
1,2,3-Trichloropropane	9.93	0.25	ug/L	10.0	ND	99.3	76-125			
trans-1,4-Dichloro 2-Butene	2.08	1.00	ug/L	10.0	ND	20.8	55-129			*
n-Propylbenzene	10.2	0.20	ug/L	10.0	ND	102	78-130			
Bromobenzene	9.81	0.20	ug/L	10.0	ND	98.1	80-120			
Isopropyl Benzene	9.95	0.20	ug/L	10.0	ND	99.5	80-128			
2-Chlorotoluene	9.89	0.10	ug/L	10.0	ND	98.9	78-122			
4-Chlorotoluene	10.0	0.20	ug/L	10.0	ND	100	80-121			
t-Butylbenzene	10.0	0.20	ug/L	10.0	ND	100	78-125			
1,3,5-Trimethylbenzene	10.1	0.20	ug/L	10.0	ND	101	80-129			
1,2,4-Trimethylbenzene	10.2	0.20	ug/L	10.0	ND	102	80-127			
s-Butylbenzene	10.1	0.20	ug/L	10.0	ND	101	78-129			
4-Isopropyl Toluene	10.1	0.20	ug/L	10.0	ND	101	79-130			
1,3-Dichlorobenzene	10.3	0.20	ug/L	10.0	ND	103	80-120			
1,4-Dichlorobenzene	10.2	0.20	ug/L	10.0	ND	102	80-120			
n-Butylbenzene	10.5	0.20	ug/L	10.0	ND	105	74-129			
1,2-Dichlorobenzene	10.2	0.20	ug/L	10.0	ND	102	80-120			
1,2-Dibromo-3-chloropropane	9.06	0.50	ug/L	10.0	ND	90.6	62-123			
1,2,4-Trichlorobenzene	10.2	0.50	ug/L	10.0	ND	102	64-124			
Hexachloro-1,3-Butadiene	10.1	0.50	ug/L	10.0	ND	101	58-123			
Naphthalene	10.5	0.50	ug/L	10.0	ND	105	50-134			
1,2,3-Trichlorobenzene	10.4	0.50	ug/L	10.0	ND	104	49-133			
Dichlorodifluoromethane	8.80	0.20	ug/L	10.0	ND	88.0	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.56		ug/L	*5.00*	*5.02*	*111*	*80-129*			
Surrogate: Toluene-d8	5.06		ug/L	*5.00*	*5.06*	*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.18		ug/L	*5.00*	*5.08*	*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.93		ug/L	*5.00*	*4.99*	*98.6*	*80-120*			

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

Matrix Spike Dup (BKF0247-MSD1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 21:02							
Chloromethane	9.84	0.50	ug/L	10.0	ND	98.4	60-138	3.51	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BKF0247-MSD1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 21:02							
Vinyl Chloride	9.76	0.10	ug/L	10.0	ND	97.6	66-133	1.56	30	
Bromomethane	9.75	1.00	ug/L	10.0	ND	97.5	72-131	0.99	30	
Chloroethane	9.26	0.20	ug/L	10.0	ND	92.6	60-155	4.81	30	
Trichlorofluoromethane	9.17	0.20	ug/L	10.0	ND	91.7	62-141	1.37	30	
Acrolein	53.8	5.00	ug/L	50.0	ND	108	52-190	1.40	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.33	0.20	ug/L	10.0	ND	93.3	76-129	3.86	30	
Acetone	52.1	5.00	ug/L	50.0	ND	104	58-142	2.53	30	
1,1-Dichloroethene	9.78	0.20	ug/L	10.0	ND	97.8	69-135	0.40	30	
Iodomethane	9.63	1.00	ug/L	10.0	ND	96.3	56-147	4.21	30	
Methylene Chloride	9.61	1.00	ug/L	10.0	ND	96.1	65-135	2.23	30	
Acrylonitrile	10.1	1.00	ug/L	10.0	ND	101	64-134	7.02	30	
Carbon Disulfide	9.51	0.20	ug/L	10.0	ND	95.1	78-125	1.26	30	
trans-1,2-Dichloroethene	9.52	0.20	ug/L	10.0	ND	95.2	78-128	2.63	30	
Vinyl Acetate	9.26	0.20	ug/L	10.0	ND	92.6	55-138	4.33	30	
1,1-Dichloroethane	9.85	0.20	ug/L	10.0	ND	98.5	76-124	1.74	30	
2-Butanone	53.7	5.00	ug/L	50.0	ND	107	61-140	0.05	30	
2,2-Dichloropropane	9.14	0.20	ug/L	10.0	ND	91.4	66-147	4.36	30	
cis-1,2-Dichloroethene	10.0	0.20	ug/L	10.0	ND	100	80-121	0.71	30	
Chloroform	10.0	0.20	ug/L	10.0	ND	100	80-122	1.84	30	
Bromochloromethane	9.88	0.20	ug/L	10.0	ND	98.8	80-121	1.15	30	
1,1,1-Trichloroethane	10.1	0.20	ug/L	10.0	ND	101	79-123	0.06	30	
1,1-Dichloropropene	9.26	0.10	ug/L	10.0	ND	92.6	80-127	3.14	30	
Carbon tetrachloride	9.92	0.20	ug/L	10.0	ND	99.2	53-137	1.10	30	
1,2-Dichloroethane	10.0	0.20	ug/L	10.0	ND	100	75-123	2.31	30	
Benzene	9.70	0.20	ug/L	10.0	ND	97.0	80-120	4.72	30	
Trichloroethene	9.16	0.20	ug/L	10.0	ND	91.6	80-120	6.55	30	
1,2-Dichloropropane	9.52	0.20	ug/L	10.0	ND	95.2	80-120	5.84	30	
Bromodichloromethane	9.72	0.20	ug/L	10.0	ND	97.2	80-121	4.45	30	
Dibromomethane	9.44	0.20	ug/L	10.0	ND	94.4	80-120	4.76	30	
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	50.0	2.50	ug/L	50.0	ND	100	67-133	3.38	30	
cis-1,3-Dichloropropene	9.20	0.20	ug/L	10.0	ND	92.0	80-124	4.28	30	
Toluene	9.77	0.20	ug/L	10.0	ND	97.7	80-120	2.45	30	
trans-1,3-Dichloropropene	8.87	0.20	ug/L	10.0	ND	88.7	71-127	4.82	30	
2-Hexanone	49.7	5.00	ug/L	50.0	ND	99.4	69-133	2.16	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BKF0247-MSD1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 21:02							
1,1,2-Trichloroethane	9.94	0.20	ug/L	10.0	ND	99.4	80-121	0.06	30	
1,3-Dichloropropane	9.39	0.10	ug/L	10.0	ND	93.9	80-120	1.41	30	
Tetrachloroethene	9.43	0.20	ug/L	10.0	ND	94.3	80-120	0.49	30	
Dibromochloromethane	9.35	0.20	ug/L	10.0	ND	93.5	65-135	3.82	30	
1,2-Dibromoethane	9.81	0.10	ug/L	10.0	ND	98.1	80-121	4.77	30	
Chlorobenzene	9.43	0.20	ug/L	10.0	ND	94.3	80-120	5.34	30	
Ethylbenzene	9.39	0.20	ug/L	10.0	ND	93.9	80-120	4.50	30	
1,1,1,2-Tetrachloroethane	9.27	0.20	ug/L	10.0	ND	92.7	80-120	5.27	30	
m,p-Xylene	19.4	0.40	ug/L	20.0	ND	97.0	80-121	3.80	30	
o-Xylene	9.47	0.20	ug/L	10.0	ND	94.7	80-121	3.55	30	
Xylenes, total	28.9	0.60	ug/L	30.0	ND	96.3	76-127	3.72	30	
Styrene	9.89	0.20	ug/L	10.0	ND	98.9	80-124	4.11	30	
Bromoform	8.47	0.20	ug/L	10.0	ND	84.7	51-134	10.20	30	
1,1,2,2-Tetrachloroethane	9.40	0.20	ug/L	10.0	ND	94.0	77-123	5.30	30	
1,2,3-Trichloropropane	9.30	0.25	ug/L	10.0	ND	93.0	76-125	6.58	30	
trans-1,4-Dichloro 2-Butene	1.31	1.00	ug/L	10.0	ND	13.1	55-129	45.00	30	*
n-Propylbenzene	9.51	0.20	ug/L	10.0	ND	95.1	78-130	7.09	30	
Bromobenzene	9.24	0.20	ug/L	10.0	ND	92.4	80-120	5.92	30	
Isopropyl Benzene	9.30	0.20	ug/L	10.0	ND	93.0	80-128	6.73	30	
2-Chlorotoluene	9.33	0.10	ug/L	10.0	ND	93.3	78-122	5.82	30	
4-Chlorotoluene	9.15	0.20	ug/L	10.0	ND	91.5	80-121	9.33	30	
t-Butylbenzene	9.33	0.20	ug/L	10.0	ND	93.3	78-125	7.11	30	
1,3,5-Trimethylbenzene	9.46	0.20	ug/L	10.0	ND	94.6	80-129	6.77	30	
1,2,4-Trimethylbenzene	9.52	0.20	ug/L	10.0	ND	95.2	80-127	7.19	30	
s-Butylbenzene	9.36	0.20	ug/L	10.0	ND	93.6	78-129	7.76	30	
4-Isopropyl Toluene	9.22	0.20	ug/L	10.0	ND	92.2	79-130	9.27	30	
1,3-Dichlorobenzene	9.33	0.20	ug/L	10.0	ND	93.3	80-120	9.78	30	
1,4-Dichlorobenzene	9.39	0.20	ug/L	10.0	ND	93.9	80-120	8.55	30	
n-Butylbenzene	9.53	0.20	ug/L	10.0	ND	95.3	74-129	9.55	30	
1,2-Dichlorobenzene	9.46	0.20	ug/L	10.0	ND	94.6	80-120	7.93	30	
1,2-Dibromo-3-chloropropane	8.07	0.50	ug/L	10.0	ND	80.7	62-123	11.60	30	
1,2,4-Trichlorobenzene	9.52	0.50	ug/L	10.0	ND	95.2	64-124	7.10	30	
Hexachloro-1,3-Butadiene	9.40	0.50	ug/L	10.0	ND	94.0	58-123	7.59	30	
Naphthalene	9.79	0.50	ug/L	10.0	ND	97.9	50-134	7.08	30	
1,2,3-Trichlorobenzene	9.54	0.50	ug/L	10.0	ND	95.4	49-133	8.51	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BKF0247 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BKF0247-MSD1)	**Source: 22F0134-03**		Prepared: 09-Jun-2022 Analyzed: 09-Jun-2022 21:02							
Dichlorodifluoromethane	8.91	0.20	ug/L	10.0	ND	89.1	48-147	1.25	30	
Surrogate: 1,2-Dichloroethane-d4	5.16		ug/L	*5.00*	*5.02*	*103*	*80-129*			
Surrogate: Toluene-d8	5.10		ug/L	*5.00*	*5.06*	*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.01		ug/L	*5.00*	*5.08*	*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.95		ug/L	*5.00*	*4.99*	*99.0*	*80-120*			

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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BKF0230 - 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 (BKF0230-BLK1)				Prepared: 13-Jun-2022 Analyzed: 18-Jun-2022 00:23						
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	6.41		ug/L	*10.0*		*64.1*	*33.6-120*			
LCS (BKF0230-BS1)				Prepared: 13-Jun-2022 Analyzed: 18-Jun-2022 00:49						
1,4-Dioxane	8.6	0.4	ug/L	10.0		85.7	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.79		ug/L	*10.0*		*67.9*	*33.6-120*			
LCS Dup (BKF0230-BSD1)				Prepared: 13-Jun-2022 Analyzed: 18-Jun-2022 01:14						
1,4-Dioxane	8.6	0.4	ug/L	10.0		86.0	39.9-120	0.31	30	
Surrogate: 1,4-Dioxane-d8	6.65		ug/L	*10.0*		*66.5*	*33.6-120*			
Matrix Spike (BKF0230-MS1)	**Source: 22F0134-03**			Prepared: 13-Jun-2022 Analyzed: 18-Jun-2022 02:57						
1,4-Dioxane	9.9	0.4	ug/L	10.0	2.2	76.5	35.1-120			
Surrogate: 1,4-Dioxane-d8	6.62		ug/L	*10.0*	*6.50*	*66.2*	*33.6-120*			

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

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BKF0230-MSD1)	**Source: 22F0134-03**			Prepared: 13-Jun-2022 Analyzed: 18-Jun-2022 03:22						
1,4-Dioxane	10.1	0.4	ug/L	10.0	2.2	78.3	35.1-120	1.77	30	
Surrogate: 1,4-Dioxane-d8	6.50		ug/L	*10.0*	*6.50*	*65.0*	*33.6-120*			

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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: GL92310W007.2021	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	20-Jun-2022 11:18

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BKF0223 - EPA 3510C SepF

Instrument: FID4 Analyst: AA/CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BKF0223-BLK1)				Prepared: 10-Jun-2022 Analyzed: 13-Jun-2022 18:05						
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	0.189		mg/L	*0.225*		*83.9*	*50-150*			
Surrogate: n-Triacontane	0.221		mg/L	*0.225*		*98.4*	*50-150*			

Golder Associates	Project: Landsburg	
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Certified Analyses included in this Report

Analyte	Certifications
EPA 8260D in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE

Golder Associates	Project: Landsburg	
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2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

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EPA 8270E-SIM in Water

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

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C12)	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C24)	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	03/28/2023
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

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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 C

Sample Integrity Data Sheets (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 2, 2021 **Time** 09:10

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.)

Static Water Level: 7.62 ft BTOC

Screened Interval: 27.9' - 38.1' BGS

Sand Pack Interval: 24.8' - 38.1' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2
Date 06/02/2021
Time Begin Purge 08:45
Time Collect Sample 09:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
7.63	08:50	6.75	765	11.3	0.95	-203.5	1.07
7.63	08:55	6.83	767	11.7	0.82	-219.7	0.36
7.63	09:00	6.84	775	12.2	0.78	-227.8	0.30
7.63	09:05	6.85	776	12.4	0.75	-233.3	0.14

Comments:
No dissolved metals collected. LMW-2-0621-D duplicate collected 0915
Grundfos: ~70 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1000 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 2, 2021 **Time** 10:15

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.)

Static Water Level: 9.7 ft BTOC

Screened Interval: 195' - 209.7' BGS

Sand Pack Interval: 189' - 209.7' BGS

Packer Depth: 187.3' BGS

Sample Description Clear, slight sulfur odor, no sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
9-40 mL	VOA	VOA vial	HCl
3-500 mL	Total Metals	HDPE	HNO3
12-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
6-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
6-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4
Date 06/02/2021
Time Begin Purge 09:53
Time Collect Sample 10:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
9.7	09:58	7.03	756	11.2	1.15	-185.6	0.42
9.7	10:03	6.97	755	11.2	0.91	-194.5	0.15
9.7	10:08	6.94	759	11.3	0.85	-193.4	0.20
9.7	10:13	6.92	763	11.4	0.8	-192.5	0.21

Comments:
Grundfos: 80 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 800 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 2, 2021 **Time** 11:40

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.)

Static Water Level: 0.22 ft BTOC

Screened Interval: 267' - 289' BGS

Sand Pack Interval: 258' - 289' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10
Date 06/02/2021
Time Begin Purge 11:10
Time Collect Sample 11:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
0.22	11:15	8.6	288.5	12.7	0.79	-216.3	1.05
0.35	11:20	8.61	287.8	12.8	0.74	-238.2	0.60
1.1	11:25	8.62	288.3	12.8	0.71	-251.5	0.53
2.2	11:30	8.63	288.2	12.8	0.69	-259.1	0.53
3.55	11:35	8.63	288.4	12.9	0.68	-262.9	0.35

Comments:
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 40
CPM: 2
CID: 50
Flow Rate: 300 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-21

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 June 2, 2021 **Time** 12:41

Media Water **Station** LMW-21

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

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

Static Water Level: 10.6 ft BTOC

Screened Interval: 9.8' - 14.8' BGS

Sand Pack Interval: 6.8' - 15' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-21
Date 06/02/2021
Time Begin Purge 12:55
Time Collect Sample 12:41

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
11.27	13:00	7.63	294	13.6	6.06	74.2	109
11.7	13:05	7.59	293	13.8	5.33	59.6	30.1
11.95	13:10	7.61	291.2	13.5	3.71	33.2	16.4
12.33	13:15	7.6	285	12.8	2.87	-4.1	6.13
12.33	13:20	7.59	289.9	13.5	3.42	-22.4	3.77
12.57	13:23	7.61	287.5	12.6	2.45	-33.8	5.21

Comments:
Purged dry at 1330. Recharging OK. Sampled 1335 for 1,4-dioxane only. Orange suspended particulates during initial purge. Cleared up by time of sampling.
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 150 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-20

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 June 2, 2021 **Time** 14:45

Media Water **Station** LMW-20

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

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

Static Water Level: 15.81 ft BTOC

Screened Interval: 14' - 24' BGS

Sand Pack Interval: 11' - 24.5' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-20
Date 06/02/2021
Time Begin Purge 14:10
Time Collect Sample 14:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
15.87	14:15	6.65	217.1	11.9	2.95	106.7	0.82
15.88	14:20	6.62	215.9	11.5	2.88	114.8	0.70
15.88	14:25	6.63	224.5	11.9	3.48	117.3	0.56
15.88	14:30	6.64	231	12.1	4.06	120.7	0.36
15.88	14:35	6.64	232.7	11.9	4.16	122.0	0.36
15.89	14:40	6.65	234.7	11.9	4.27	124.2	0.26

Comments:
Tubing intake at 20ft depth
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 150 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-22

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 June 2, 2021 **Time** 15:55

Media Water **Station** LMW-22

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

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

Static Water Level: 12.49 ft BTOC

Screened Interval: 17' - 27' BGS

Sand Pack Interval: 14' - 27.3' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor, trace orange particulates.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-22
Date 06/02/2021
Time Begin Purge 15:18
Time Collect Sample 15:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
13.13	15:23	7.22	307.3	12.3	1.51	-126.8	159
13.1	15:28	7.28	311.7	12.6	1.5	-139.2	161
13.07	15:33	7.31	317.1	13	1.35	-140.2	47.1
13.05	15:38	7.32	317.7	12.9	1.4	-139.9	41.5
13.08	15:43	7.34	316.8	12.6	1.22	-139.7	27.2
13.03	15:46	7.34	319.3	13	1.26	-139.5	14.3

Comments:
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 150 mL/min

Sampler _____ **Date** June 2, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 3, 2021 **Time** 08:40

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.)

Static Water Level: 10.44 ft BTOC

Screened Interval: 15' - 25' BGS

Sand Pack Interval: 11' - 25' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12
Date 06/03/2021
Time Begin Purge 08:05
Time Collect Sample 08:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
10.44	08:10	6.55	422.4	10.8	0.94	-23.5	5.08
10.45	08:15	6.58	415.1	10.8	0.83	-41.1	4.44
10.45	08:20	6.58	414.5	10.7	0.81	-44	4.56
10.45	08:25	6.59	413.8	10.8	0.77	-50.8	3.74
10.45	08:30	6.59	413.3	10.8	0.76	-51.6	3.68
10.45	08:35	6.6	412.2	10.7	0.75	-53.9	3.61

Comments:
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 20
CPM: 2
CID: 47
Flow Rate: 230 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 3, 2021 **Time** 09:05

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.)

Static Water Level: ft BTOC

Screened Interval: N/A

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB
Date 06/03/2021
Time Begin Purge 09:21
Time Collect Sample 09:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	09:21						

Comments:
Field Blank, direct pour..
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 3, 2021 **Time** 10:15

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.)

Static Water Level: 10.98 ft BTOC

Screened Interval: 115' - 140' BGS

Sand Pack Interval: 110' - 150' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
2-500 mL	1,4-dioxane	500 mL amber bottles	None
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
3-40 mL	VOA	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R
Date 06/03/2021
Time Begin Purge 09:30
Time Collect Sample 10:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
11.17	09:35	7.27	691	10.9	2.47	-68.2	0.98
11.13	09:40	7.28	692	11	1.98	-79.2	0.92
11.15	09:45	7.3	692	10.9	1.5	-92.4	0.61
11.18	09:50	7.31	693	11	1.32	-99.2	0.44
11.17	09:55	7.32	694	11	1.15	-105.7	0.53
11.18	10:00	7.33	694	11	1.01	-112.2	0.39
11.19	10:05	7.34	694	11	0.94	-116.3	0.46
11.19	10:10	7.34	694	11	0.85	-119.3	0.38

Comments:
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 35
CPM: 2
CID: 48
Flow Rate: 350 mL/min

Sampler DMD **Date** June 3, 2021

Supervisor _____ **Date** _____

Golder Associates Inc.

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-14

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 June 3, 2021 **Time** 00:25

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.)

Static Water Level: 166.55 ft BTOC

Screened Interval: 156.5' - 172.3' BGS

Sand Pack Interval: 152.5' - 175.8' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14
Date 06/03/2021
Time Begin Purge 11:50
Time Collect Sample 00:25

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
166.66	11:55	6.85	1,121	14	4.66	144	0.58
166.66	12:00	6.62	1,005	12.7	1.22	-5.8	5.06
166.66	12:05	6.63	958	12.4	0.89	-37.1	6.75
166.66	12:10	6.62	922	12.5	0.8	-45.3	3.42
166.66	12:15	6.62	912	12.3	0.79	-46.8	3.12
166.66	12:20	6.62	904	12.4	0.77	-47.5	2.63

Comments:
Grundfos: N/A
Packer: N/A
Tank: 140
Throttle: 115
CPM: 2
CID: 49
Flow Rate: 300 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-15

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 June 3, 2021 **Time** 13:55

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.)

Static Water Level: ft BTOC

Screened Interval: 235' - 245' BGS

Sand Pack Interval: 231' - 245' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15
Date 06/03/2021
Time Begin Purge 13:15
Time Collect Sample 13:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
152.15	13:20	7.44	384	11.9	8.66	94.1	6.79
152.15	13:25	7.27	380.4	12	3.7	-52.0	2.84
152.15	13:30	7.28	373.6	11.5	2.04	-94.3	4.33
152.15	13:35	7.33	374.4	11.3	1.47	-115.7	2.42
152.15	13:40	7.36	375.3	11	1.31	-121.6	2.50
152.17	13:45	7.38	376.5	11	1.2	-125.1	1.63
152.18	13:50	7.38	376.4	11	1.16	-127.3	1.15

Comments:
Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 53
Flow Rate: 250 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

Site Location Ravensdale, WA **Sample ID** LMW-11

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 June 3, 2021 **Time** 15:05

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.)

Static Water Level: 157.9 ft BTOC

Screened Interval: 696' - 707' BGS

Sand Pack Interval: 688' - 707' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
3-40 mL	VOA	VOA vial	HCl
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11
Date 06/03/2021
Time Begin Purge 14:35
Time Collect Sample 15:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
157.9	14:40	7.42	405.3	10.8	3.48	-21.4	0.87
157.9	14:45	7.27	404	10.8	1.67	-55.6	0.64
157.9	14:50	7.26	404.7	10.8	1.27	-65.9	0.72
157.9	14:55	7.26	405.6	10.6	1.15	-70.4	0.35
157.9	15:00	7.27	406.5	10.6	1.09	-73.6	0.47

Comments:
Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 110
CPM: 1
CID: 15
Flow Rate: 400 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 3, 2021 **Time** 16:18

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.)

Static Water Level: 31.35 ft BTOC

Screened Interval: 90.9' - 105.9' BGS

Sand Pack Interval: 82.5' - 105.9' BGS

Packer Depth: 81.22' BGS

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
3-40 mL	VOA	VOA vial	HCl
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6
Date 06/03/2021
Time Begin Purge 15:53
Time Collect Sample 16:18

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
31.35	15:58	6.97	187	10.1	0.97	-37.9	2.81
31.35	16:03	6.91	188.7	10.4	0.85	-47.6	2.25
31.35	16:08	6.89	189.4	10.5	0.8	-51.6	1.28
31.35	16:13	6.88	189.7	10.5	0.78	-53.8	1.18

Comments:
Grundfos: 180 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 2700 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 3, 2021 **Time** 17:50

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.)

Static Water Level: 226.36 ft BTOC

Screened Interval: 239.6' - 253.7' BGS

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
3-40 mL	VOA	VOA vial	HCl
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7
Date 06/03/2021
Time Begin Purge 17:10
Time Collect Sample 17:50

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
226.4	17:15	7.3	366.1	11	1.24	74.0	30.1
226.4	17:20	7.33	373.9	11.7	1.32	36.6	9.44
226.4	17:25	7.33	395.5	13.7	1.27	20.2	6.88
226.4	17:30	7.33	403.9	14.5	1.12	3.8	5.27
226.4	17:35	7.33	408.2	14.9	1.05	-7.9	3.61
226.4	17:40	7.34	410	15.1	1.1	-35.5	2.26
226.4	17:43	7.33	410.7	15.1	0.94	-43.7	2.19
226.4	17:46	7.33	410.9	15.1	0.93	-47.4	4.09

Comments:
Grundfos: 330 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1200 mL/min

Sampler _____ **Date** June 3, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 4, 2021 **Time** 08:45

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.)

Static Water Level: 4.8 ft BTOC

Screened Interval: 8' - 13' BGS

Sand Pack Interval: 6' - 13' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8
Date 06/04/2021
Time Begin Purge 08:10
Time Collect Sample 08:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
6.02	08:15	6.54	386.4	11.8	1.2	-80.9	3.84
6.6	08:20	6.55	420.5	11.8	0.9	-91.9	3.43
7.1	08:25	6.6	450	11.7	0.82	-97.8	2.56
7.37	08:30	6.63	460.2	11.8	0.78	-100.9	2.31
7.47	08:35	6.65	468	11.9	0.76	-101.8	1.48

Comments:
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 150 mL/min

Sampler _____ **Date** June 4, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 4, 2021 **Time** 10:00

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.)

Static Water Level: 14.31 ft BTOC

Screened Interval: 231.8' - 241.8' BGS

Sand Pack Interval: 231.8' - 241.8' BGS

Packer Depth: 222.11' BGS

Sample Description Clear, no sheen, slight sulfur odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
3-40 mL	VOA	VOA vial	HCl
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5
Date 06/04/2021
Time Begin Purge 09:30
Time Collect Sample 10:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
14.3	09:35	6.96	522	10.7	1.22	-53.1	4.20
14.3	09:40	6.96	525	11.1	0.9	-61.2	4.28
14.3	09:45	6.97	526	11.1	0.8	-63.1	2.19
14.3	09:50	6.97	527	11.2	0.77	-65.8	4.07
14.3	09:55	6.97	527	11.2	0.76	-66.4	3.83

Comments:
Grundfos: ~135 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 3600 mL/min

Sampler _____ **Date** June 4, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 4, 2021 **Time** 11:00

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.)

Static Water Level: 12.27 ft BTOC

Screened Interval: 49.8' - 64.8' BGS

Sand Pack Interval: 47.1' - 64.8' BGS

Packer Depth: 39.33' BGS

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	VOA	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3
Date 06/04/2021
Time Begin Purge 10:30
Time Collect Sample 11:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.24	10:35	7.75	240.8	11.5	0.96	14.5	1.08
12.24	10:40	7.75	241.2	11.6	0.8	-39.8	0.55
12.24	10:45	7.74	241.1	11.6	0.76	-65.1	0.90
12.24	10:50	7.73	242.1	11.5	0.74	-75.8	0.58
12.24	10:55	7.72	242.7	11.5	0.73	-80.9	0.64

Comments:
Grundfos: ~135 Hz
Packer: 130 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 3000 mL/min

Sampler _____ **Date** June 4, 2021

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2021

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

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 June 4, 2021 **Time** 12:15

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.)

Static Water Level: 100.15 ft BTOC

Screened Interval: 149' - 159' BGS

Sand Pack Interval: 143.5' - 159' BGS

Packer Depth: N/A

Sample Description Clear, no sheen, no odor.

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter
3-40 mL	VOA	VOA vial	HCl
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9
Date 06/04/2021
Time Begin Purge 11:45
Time Collect Sample 12:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
100.15	11:50	7.03	501	10.8	1.73	-51.5	1.59
100.15	11:55	6.97	501	10.8	1.2	-69.9	0.51
100.15	12:00	6.97	500	10.8	1.03	-74.8	1.26
100.15	12:05	6.97	500	10.8	0.94	-77.3	1.07
100.15	12:10	6.97	499.9	10.8	0.91	-78.5	0.78

Comments:
Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 51
Flow Rate: 500 mL/min

Sampler _____ **Date** June 4, 2021

Supervisor _____ **Date** _____

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