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REPORT

Compliance Monitoring Report
September 2021 Quarterly Groundwater Sampling
Landsburg Mine Site

Submitted to:

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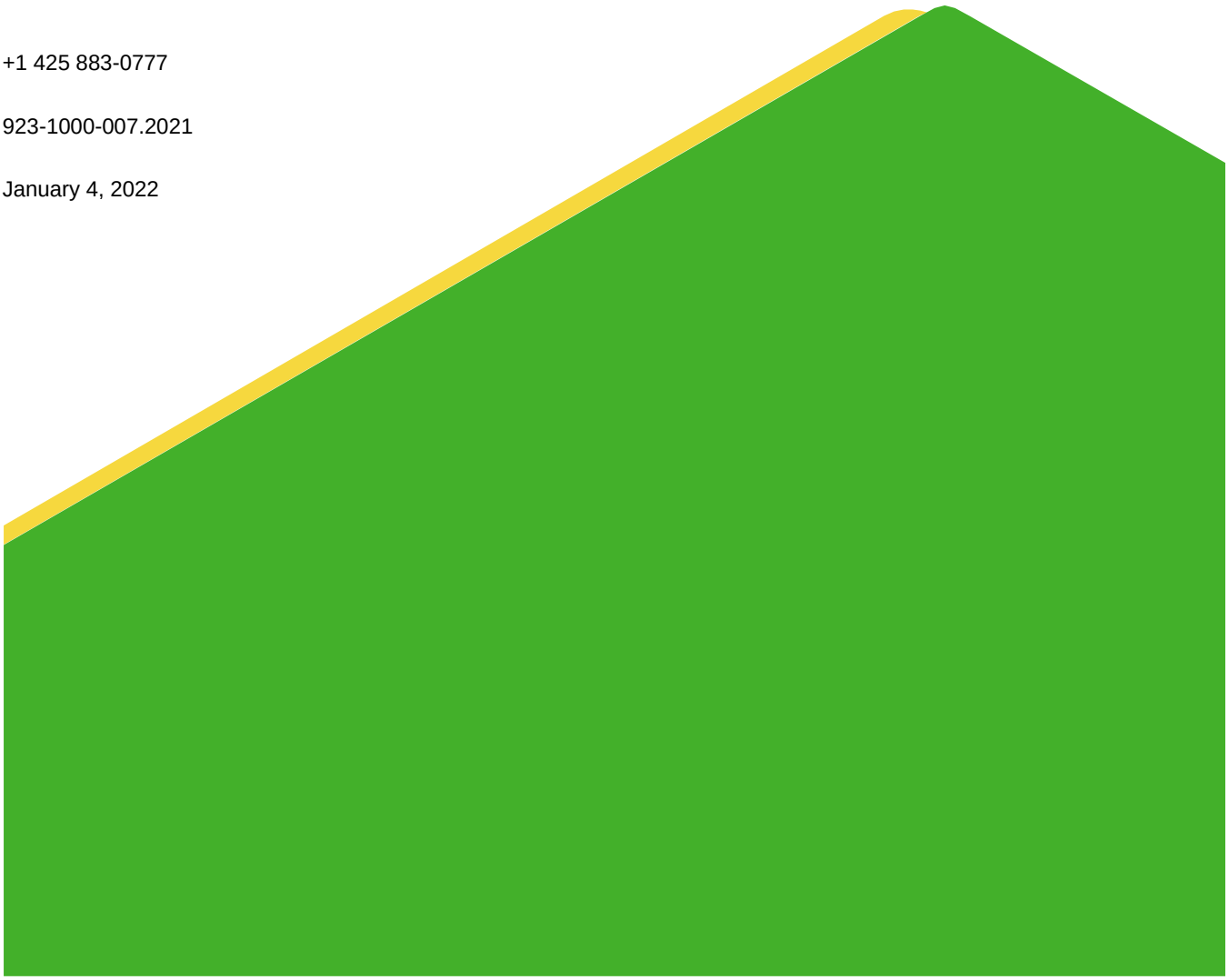

Distribution List

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Landsburg PLP Group

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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). This letter report presents the results of the third quarterly long-term confirmational monitoring event, which was completed in September 2021. The event was conducted from September 28 to 30, 2021, and included collecting groundwater samples from monitoring wells LMW-2, LMW-3, LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-10, LMW-11, LMW-12, LMW-13R, LMW-14, and LMW-15.

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

2.0 SAMPLING ACTIVITIES

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

- Measurement of static water levels at monitoring wells.
- Well purging with the dedicated pumping systems installed in each well to ensure sample representativeness.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, oxidation-reduction potential (ORP) and turbidity.
- Collection of representative samples in appropriate containers provided by the analytical laboratory.
- 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
  - Total Metals by USEPA SW-846 Method 200.8 and SW-846 6010D
  - Total Mercury by USEPA SW-846 Method 7470A

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. Table 1 presents depths to groundwater measured during the event and calculated static water level elevations.

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

The laboratory data packages underwent data validation. Items of note are provided in a validation memorandum in Appendix A. In general, data were found to be acceptable with minor qualification, with the following exception: the analytical result for 2-chloroethyl vinyl ether reported for sample LMW-4-0921 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-4-0921 was rejected. 2-chloroethyl vinyl ether has never been detected at the Site. Data qualifiers are defined, and all data qualifiers assigned under the data validation process are presented in the Appendix A data validation memorandum.

Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample.

3.0 RESULTS

The results of the September 2021 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.
  - Carbon disulfide was detected in LMW-10 at a concentration of 0.28 micrograms per liter (µg/L). The reported concentration is considerably lower than the MTCA Method A groundwater cleanup level of 800 µg/L. Carbon disulfide has been detected at low levels in Site groundwater in previous sampling events. The detection of carbon disulfide is attributed to being present in the coal bed material as a natural constituent.
  - 1,1-Dichloroethane (1,1-DCA) was detected in LMW-12 at a concentration of 0.21 µg/L, which is consistent in concentration with previous detections of 1,1-DCA in this well. The reported concentration is significantly less than the MTCA Method B groundwater cleanup level of 7.68 µg/L.
  - Chloroethane was detected in LMW-12 at a concentration of 0.74 µg/L, which is consistent in concentration with previous detections of chloroethane in this well. The reported concentration is significantly less than the MTCA Method B groundwater cleanup level of 80 µg/L.
- In the September 2021 round of sampling, 1,4-dioxane was detected in LMW-2 (2.0 µg/L), LMW-4 (2.0 µg/L), and LMW-12 (0.5 µg/L). 1,4-dioxane has not been detected in any other Site monitoring wells. The September 2021 results are consistent with 1,4-dioxane concentrations reported during previous sampling of these wells and do not require additional action at this time under the approved Amendment to the Cleanup Action Plan (Ecology 2021).
- Metals detected in groundwater samples during the current sampling round include the following:
  - The groundwater sample from LMW-12 contained iron concentrations above the MTCA Method B cleanup level of 11 milligrams per liter (mg/L). Iron has been detected in mine groundwater above MTCA

cleanup levels in every monitoring event at the Site. It is a naturally occurring metal that is commonly associated with groundwater from coal mines (Fuste et al. 1983). The concentrations of iron reported during the September 2021 sampling event are within the range of typical concentrations reported during previous groundwater monitoring events at the Site.

- The groundwater sample from LMW-11 contained total arsenic at a concentration of 0.00904 mg/L. Arsenic in LMW-11 is greater than the MTCA Method A groundwater cleanup level (0.005 mg/L) but less than the Washington State primary drinking water MCL (0.01 mg/L). The MTCA groundwater cleanup level is based on typical groundwater background levels in the State of Washington. Arsenic has been detected in groundwater from LMW-11 near or above MTCA cleanup levels during every monitoring event since LMW-11 was installed. LMW-11 is screened within the deepest portions of the Rogers coal seam, where the groundwater is naturally reducing with low reduction-oxidation (redox) potential and low dissolved oxygen levels. Arsenic is a naturally occurring metal commonly detectable in groundwater, especially in groundwater having low redox and dissolved oxygen levels. Arsenic was also detected in LMW-15 at a concentration of 0.00319 mg/L, just slightly above the detection limit of 0.003 mg/L.
- Groundwater samples from LMW-14 contained cobalt at concentrations of 0.0211 mg/L, above the MTCA Method B cleanup level of 0.0048 Cobalt mg/L. Cobalt has been detected in LMW-14 in every monitoring event since it was installed. The September 2021 detection of 0.0211 mg/L is less than half of the historical high of 0.0515 mg/L, detected in March 2020. The cobalt detection in LMW-14 is naturally occurring in association with the coal mine water (Golder 2020).

4.0 NEXT SAMPLING EVENT

The next compliance monitoring event is a quarterly confirmational monitoring event scheduled for December 2021. It includes sampling of Site groundwater monitoring wells LMW-2 through LMW-15. The December 2021 event also includes sampling of groundwater monitoring wells LMW-20, LMW-21, LMW-22 north of the Site. LMW-20, LMW-21, and LMW-21 are located between the Site and Cedar River and will be sampled for 1,4-dioxane only.

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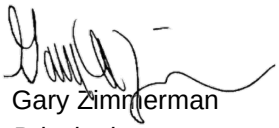

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Principal

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5.0 REFERENCES

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Tables

Table 1: Groundwater Elevation Data, Landsburg Mine Site, September 28, 2021

	LMW-1	LMW-2	LMW-3	LMW-4[1]	LMW-5	LMW-6	LMW-7[1]	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14[1]	LMW-15
Water Depths															
Date of data collection	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021
Time of data collection	12:32 PM	11:12 AM	2:33 PM	11:45 AM	2:40 PM	12:09 PM	2:10 PM	2:43 PM	2:27 PM	11:48 AM	1:03 PM	11:54 AM	11:52 AM	12:46 PM	12:59 PM
Measured to Top of PVC (ft btc)	144.96	8.09	13.00	9.63	14.54	44.81	215.25	5.15	100.37	0.34	158.25	12.05	12.59	161.32	152.32
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
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
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
Corrected Water Elevation															
Using PVC elevation (ft NAVD88)	**620.40**	**609.70**	**643.75**	**609.64**	**643.73**	**587.52**	**556.26**	**641.82**	**643.62**	**618.64**	**643.94**	**613.30**	**613.27**	**643.80**	**644.14**

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: September 2021 Groundwater Analytical Results Landsburg Mine Site

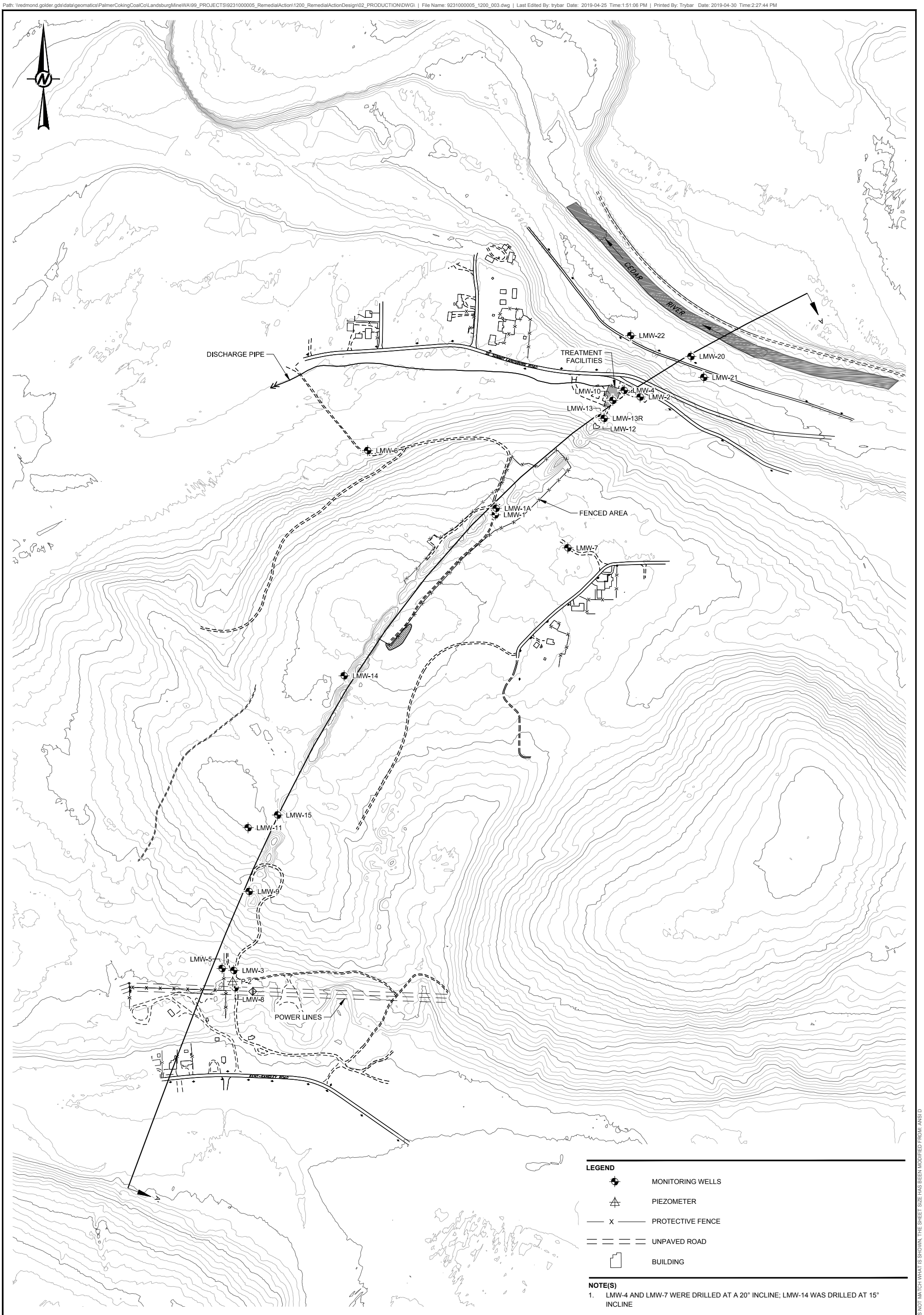
ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank 1	Trip Blank 2
		9/28/2021	9/28/2021	9/30/2021	9/28/2021	9/30/2021	9/29/2021	9/30/2021	9/30/2021	9/30/2021	9/29/2021	9/29/2021	9/29/2021	9/28/2021	9/29/2021	9/29/2021	9/28/2021	-	-
Field Parameter																			
Temperature	°C	12.3	-	11.9	11.4	11.2	10.9	14.7	13.0	11.0	11.4	10.6	10.8	11.0	11.2	10.2	-	-	-
pH	stnd	6.67	-	7.6	6.71	6.72	6.76	6.97	6.72	6.88	8.51	7	6.44	7.21	6.47	7.17	-	-	-
Specific Conductance	uS/cm	774	-	242	752	515	203.4	475.3	501	494.2	272.5	398.4	547	683	782	353.6	-	-	-
Dissolved Oxygen	mg/L	0.75	-	0.74	0.7	0.69	0.75	0.87	0.65	0.88	0.74	1.03	0.76	0.78	0.69	0.99	-	-	-
ORP	mV	-214.6	-	-57.2	-203.2	-34.9	-61.8	-78.0	-98.6	-60.1	-228.5	-75.0	-71.1	-219.1	-54.6	-139.4	-	-	-
Turbidity	NTU	0.28	-	0.28	0.28	1.77	1.03	0.71	1.58	0.2	0.24	0.38	3.08	0.26	1.49	0.98	-	-	-
Metals (Total)																			
Aluminum	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA
Antimony	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Arsenic	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	**0.00904**	0.003 U	0.003 U	0.003 U	**0.00319**	0.003 U	NA	NA
Barium	mg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.534**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA
Beryllium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Cadmium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA
Calcium	mg/L	**111**	**111**	**35.8**	**110**	**80.6**	**25.7**	**55.4**	**70.5**	**79**	**6.47**	**58.4**	**79**	**83.3**	**129**	**58.7**	0.5 U	NA	NA
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Cobalt	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.0211**	0.01 U	0.01 U	NA	NA
Copper	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Iron	mg/L	0.2 U	0.2 U	0.2 U	**0.3**	**0.294**	**2.02**	**1.11**	**10.2**	**1.38**	0.2 U	**0.48**	**14.1**	**1.08**	**9.72**	**4.01**	0.2 U	NA	NA
Lead	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Magnesium	mg/L	**69.2**	**65.1**	**14.7**	**68.1**	**44.3**	**13.2**	**26**	**38.5**	**42.9**	**3.05**	**26.4**	**51.7**	**37.4**	**70.1**	**25.7**	0.5 U	NA	NA
Manganese	mg/L	**0.227**	**0.216**	**0.025**	**0.21**	**0.226**	**0.0282**	**0.163**	**0.466**	**0.187**	0.01 U	**0.186**	**0.762**	**0.0316**	**0.535**	**0.375**	0.01 U	NA	NA
Mercury	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	NA
Nickel	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	NA
Potassium	mg/L	**3.55**	**3.47**	**1.61**	**3.65**	**2.6**	**0.673**	**3.22**	**2.13**	**2.54**	**1.25**	**2.13**	**3.6**	**3.16**	**3.87**	**2.12**	0.5 U	NA	NA
Selenium	mg/L	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	NA	NA
Silver	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA
Sodium	mg/L	**20.5**	**20.5**	**10**	**21.3**	**14.8**	**7.35**	**44.6**	**13.1**	**15**	**77.5**	**24.7**	**9.71**	**83.4**	**11.9**	**13**	0.5 U	NA	NA
Thallium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA
Vanadium	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	NA	NA
Zinc	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
Volatile Organic Compounds (VOCs)																			
Acetone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	ug/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Acrylonitrile	ug/L	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Benzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
methyl ethyl ketone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Sec-Butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-butylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Disulfide	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.28**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.74**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Chloroethyl vinyl ether	ug/L	1 UJ	1 UJ	1 UJ	1 R	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Chloroform	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorotoluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylene Dibromide	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromomethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 2: September 2021 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank 1	Trip Blank 2
1,3-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,4-Dichloro-2-butene	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.21**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cis-1,2-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2-Dichloropropane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cis-1,3-Dichloropropene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iodomethane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cumene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
p-Isopropyltoluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.13**	1 U	1 U
Methyl isobutyl ketone	ug/L	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Naphthalene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1,2-Tetrachloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CFC-113	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichloropropane	ug/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Acetate	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Chloride	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
m, p-Xylene	ug/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
o-Xylene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Total Xylenes	ug/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Semi-Volatile Organic Compounds (SVOCs)																			
1,4-Dioxane	ug/L	**2**	**1.9**	NA	**2**	NA	NA	NA	NA	NA	0.4 U	NA	**0.5**	0.4 U	NA	NA	0.4 U	NA	NA
Hydrocarbon Identification																			
Diesel Range	mg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA
Gas Range	mg/L	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	NA	NA
Lube Oil Range	mg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA

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

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

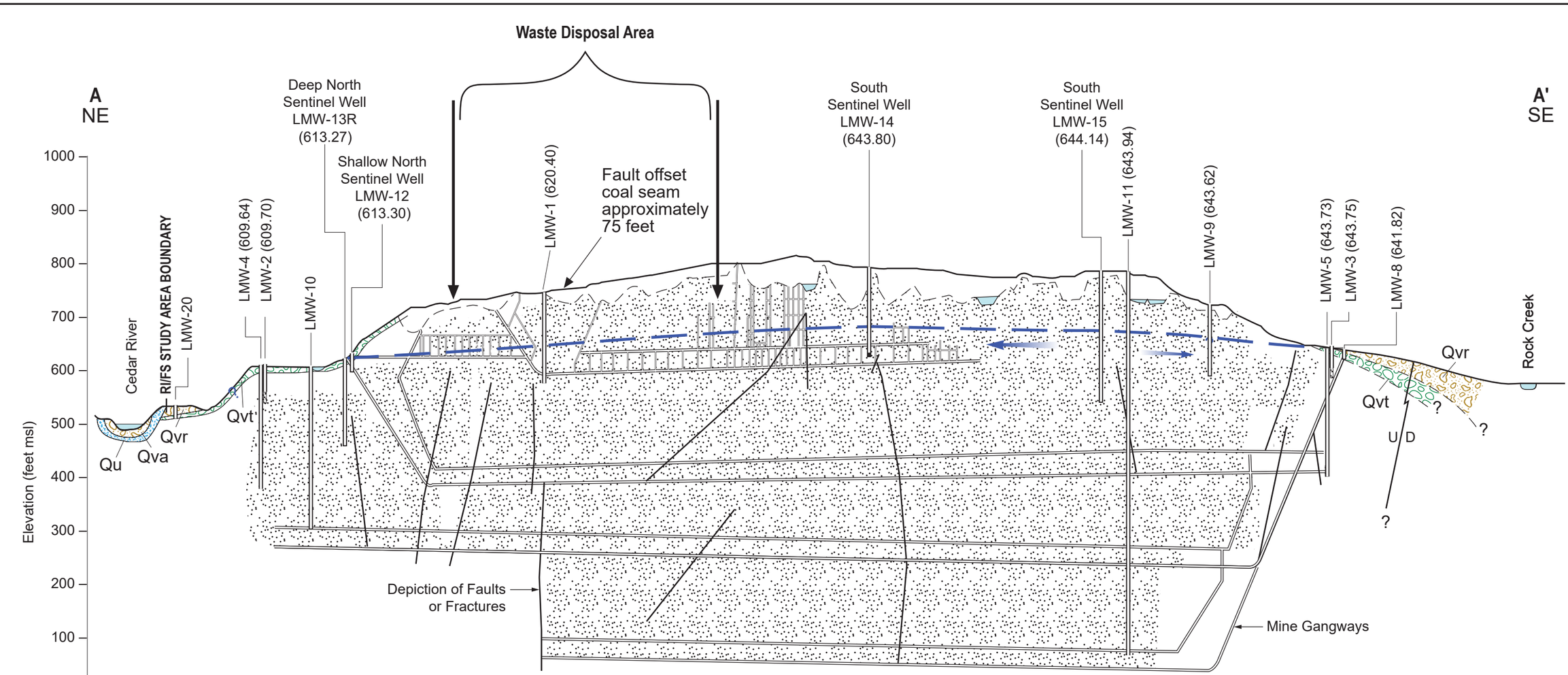
CONSULTANT
GOLDER
MEMBER OF WSP

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

PROJECT
LANDSBURG MINE SITE
MTCA REMEDIAL ACTION

TITLE
SITE MAP

PROJECT NO.	PHASE	REV.	SHEET
9231000005	1200	A	1



EXPLANATION

- Potentiometric surface
- Outline of trench bottom
- LMW-2 (609.99) Well ID (water level in ft. amsl)
- Qvt Till, compact mixture of gravel occasional boulders in clayey silty sand matrix
- Sandstone
- Surface water feature

0 500
FEET

- 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

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 09/28/2021

CLIENT
LANDSBURG PLP GROUP

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2020-08-17
PREPARED	REDMOND
DESIGN	
REVIEW	
APPROVED	

PROJECT
LANDSBURG MINE SITE

TITLE
CROSS-SECTION ALONG STRIKE AT COAL SEAM SEPTEMBER 28, 2021
CROSS-SECTION A-A'

PROJECT No.	PHASE	FIGURE
923-1000-007	2021	2

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

APPENDIX A

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

TECHNICAL MEMORANDUM

DATE January 4, 2021 **Project No.** 923-1000-007.2021

TO Bill Kombol,
Palmer Coking Coal Company

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

LANDSBURG MINE SITE SEPTEMBER 2021 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 September 28 to 30, 2021 at the Landsburg Mine Site in Washington (Site) as part of the Landsburg Groundwater sampling project. Samples in the laboratory sample delivery group (SDG) as indicated in Table 1 was reviewed in this DUSR to identify quality issues which could affect the use of the sample data for decision making purposes.

Fourteen water samples, one field duplicate sample, one field blank, and two trip blanks were collected by Golder Associates 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
- Total Metals by USEPA SW-846 Method 200.8 and SW-846 6010D
- Total Mercury by USEPA SW-846 Method 7470A

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

[1] USEPA. 2020. Test methods for evaluating solid waste, physical/chemical methods (SW-846): 3rd edition, and subsequent updates, Environmental Protection Agency, accessed at URL https://www.epa.gov/hw-sw846

[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.

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

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

Data Qualifier Definitions

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 for LMW-4-0921. The MS/MSD results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following Guidelines and using professional judgment, the result for 2-chloroethyl vinyl ether for LMW-4-0921 was rejected (R). 2-chloroethyl vinyl ether was not detected during the September 2021 sampling

round and has never been detected at the Site. Other minor data qualifiers related to sample preservation were also reported.

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. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the September 2021 sampling round and have never been detected at the Site. Qualifier Summary Table (Table 2) is included with the qualifiers applied. For details about the data validation, refer to the data validation checklist in Attachment A. The following bulleted items highlight comments and/or qualifications to specific parameters:

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

Attachments

Attachment A Tables
Table 1 – Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation September 2021
Table 2 – Qualifier Summary Table Landsburg Mine Water Sampling Investigation September 2021

Attachment B Level 2A Data Validation Checklist

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APPENDIX A

Tables

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation - September 2021

						Analyses/Parameters			
SDG	**Field Identification**	**Collection Date**	**Lab Identification**	**Matrix**	**QC Samples**	**VOCs (8260D)**	**1,4-Dioxane (8270E-SIM)**	**Total Metals (EPA 200.8/6010D/7470A)**	**TPH HCID**
21I0413	LMW-2-0921	9/28/21 11:50	21I0413-01	WG	-	X	X	X	X
21I0413	LMW-2-0921-D	9/28/21 12:00	21I0413-02	WG	FD	X	X	X	X
21I0413	LMW-4-0921	9/28/21 13:25	21I0413-03	WG	MS/MSD	X	X	X	X
21I0413	LMW-13R-0921	9/28/21 15:05	21I0413-04	WG	-	X	X	X	X
21I0413	Trip Blank-1	9/28/21 0:00	21I0413-05	WQ	TB	X	-	-	-
21J0033	LMW-7-0921	9/30/21 9:45	21J0033-01 21J0033-02	WG	-	X	-	X	X
21J0033	LMW-9-0921	9/30/21 11:30	21J0033-03 21J0033-04	WG	-	X	-	X	X
21J0033	LMW-3-0921	9/30/21 12:40	21J0033-05 21J0033-06	WG	-	X	-	X	X
21J0033	LMW-5-0921	9/30/21 13:10	21J0033-07 21J0033-08	WG	-	X	-	X	X
21J0033	LMW-8-0921	9/30/21 14:55	21J0033-09 21J0033-10	WG	-	X	-	X	X
21J0035	LMW-12-0921	9/29/21 10:10	21J0035-01	WG	-	X	X	X	X
21J0035	LMW-10-0921	9/29/21 11:10	21J0035-02	WG	-	X	X	X	X
21J0035	LMW-11-0921	9/29/21 13:10	21J0035-03	WG	-	X	-	X	X
21J0035	LMW-FB-0921	9/28/21 11:35	21J0035-04	WQ	FB	X	X	X	X
21J0035	LMW-15-0921	9/28/21 14:40	21J0035-05 21J0035-06	WG	-	X	-	X	X
21J0035	LMW-14-0921	9/28/21 16:20	21J0035-07 21J0035-08	WG	-	X	-	X	X
21J0035	LMW-6-0921	9/28/21 17:30	21J0035-09 21J0035-10	WG	-	X	-	X	X
21J0035	Trip Blank-2	9/28/21 17:30	21J0035-11	WQ	TB	X	-	-	-

Notes:

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

All samples collected for dissolved metals were placed on hold and subsequently not analyzed.

Abbreviations:

QC - Quality Control

SDG - Sample Delivery Group

FD - Duplicate

TB - Trip Blank

FB - Field Blank

VOCs - Volatile Organic Compounds

TPH HCID - Total Petroleum Hydrocarbons Hydrocarbon Identification

WG - Groundwater

WQ - Water Quality

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation - September 2021

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
21I0413 21J0033 21J0035	All Samples	Acrolein	--	--	--	UJ	Sample Preservation
21I0413 21J0033 21J0035	All Samples	Acrylonitrile	--	--	--	UJ	Sample Preservation
21I0413 21J0033 21J0035	All samples except LMW-4-0921	2-Chloroethyl vinyl ether	--	--	--	UJ	Sample Preservation
21I0413	LMW-4-0921	2-Chloroethyl vinyl ether	--	--	--	R	MS/MSD did not recover
--	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers or J-qualifiers are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations

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

Qualifier Definitions

UJ - Non-Detect Result, RL is estimated
R - Rejected Result
J - Estimated Result
U: Not detected above the RL

APPENDIX B

Level 2A Data Validation Checklist

Project Name: Landsburg Groundwater
Project Number/Phase/Task: 9231000007 p2021
Reviewing Company: Golder Associates
Project Manager: Gary Zimmerman
Data Evaluator: Michael Shadle
Data Evaluation Date: November 9, 2021
Checked by: Carol Lovett
Review Date: 11/10/2021
Laboratory: Analytical Resources, Inc., Tukwila, WA
Lab SDG #: 21I0413; 21J0033; 21J0035

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?	☒	☐		
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?	☒	☐		
e) Were samples received in good condition?	☐	☒		See Note 1
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?	☐	☒		See Note 2
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 3
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?	☒	☐		See Note 4
c) Were any analytes detected in the associated trip blanks?	☐	☒	☐	
d) Were any analytes detected in the associated field or equipment/rinsate blanks?	☒	☐	☐	See Note 5
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-4-0921
b) Were proper analytes reported in the MS/MSD?	☒	☐	☐	
c) Were project-specific MS/MSD recoveries within control limits?	☐	☒	☐	See Note 6

MS/MSDs	**YES**	**NO**	**NA**	**COMMENTS**
d) If not, were sample concentrations greater than 4x the spiking concentration?	☒	☐	☐	See Note 6
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-2-0921/ LMW-2-0921-D
d) Was field duplicate RPD or absolute difference criteria acceptable?	☒	☐	☐	

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

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

Comments/Notes:

1. In SDG 21I0413, the work order indicates that for sample LMW-4-0921 (21H0413-03), four (4) out of the five (5) VOA vials contained bubbles and in sample LMW-13R-0921 (21H0413-04), one (1) of the five (5) VOA vials contained bubbles. There is no indication in the case narrative or the cooler receipt form on the size of the bubbles. It is assumed that the size of the bubbles was less than 6mm, and if one of the VOA vials containing bubbles was used for analysis, the size of the bubble did not affect analysis.

   In SDG 21J0035, the work order indicates that for sample Trip blank-2, one (1) out of the three (3) VOA vials contained bubbles. There is no indication in the case narrative or the cooler receipt form on the size of the bubbles. It is assumed that the size of the bubbles was less than 6mm, and if one of the VOA vials containing bubbles was used for analysis, the size of the bubble did not affect analysis.

2. In SDG 21J0033, the chain of custody (COC) indicates that dissolved metals was collected. However, none of the dissolved metals samples were analyzed. There is no action but to note.

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

4. Analytes were detected in the preparation/method/laboratory blanks, as shown in the table below. Following Organic Guidelines, when the associated blank concentration was less than the RL and associated sample results were either non-detect or were greater than the RL, data were not qualified.

SDG	Blank ID	Method	Analyte	Result	Qualifier	RL	MDL	Units
21I0413 21J0033 21J0035	BJJ0153-BLK1	SW8260C	Hexachlorobutadiene	0.60		0.50	0.43	µg/L

5. Analytes were detected in the field blank, as shown in the table below. Following Organic Guidelines, when the associated blank concentration was less than the RL and associated sample results were either non-detect or were greater than the RL, data were not qualified.

SDG	Blank ID	Method	Analyte	Result	Qualifier	RL	MDL	Units
21J0035	LMW-FB-0921	SW8260C	Methylene chloride	1.13		1.0	0.53	µg/L

6. 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 upper control limit and associated sample results were non-detect, data were not qualified.

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

Primary Sample Name	Parameter	Analyte	MS/MSD % Recovery	RPD	% Recovery / RPD Criteria
LMW-4-0921	SW8260D	Trichlorofluoromethane	**153/150**	1.80	62-141/30
LMW-4-0921	SW8260D	2-Chloroethyl vinyl ether	**NR/NR**	-	64-120/30
LMW-4-0921	SW8260D	1,2-Dibromoethane	**125/123**	1.24	80-121/30
LMW-4-0921	SW8260D	m,p-Xylene	**123/122**	1.07	80-121/30
LMW-4-0921	SW8260D	Styrene	**126/**122	3.43	80-124/30
LMW-4-0921	SW8260D	1,2,4-Trimethylbenzene	**128/**124	3.13	80-127/30
LMW-4-0921	SW8260D	o-Xylene	121**/122**	0.39	80-121/30
LMW-4-0921	SW6010D	Magnesium[a]	**80.9/71.7**	1.22	75-125/20
LMW-7-0921	SW6010D	Calcium[a]	**68.1/85.9**	2.81	75-125/20
LMW-7-0921	SW6010D	Sodium[a]	**72.8/81.0**	1.56	75-125/20
Notes: [a] – Concentration in the parent sample was greater than 4x the spiking concentration					

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

27 October 2021

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

RE: Landsburg

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
21I0413	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: 21J0413	Turn-around Requested: Standard	Page: 1 of 1	
ARI Client Company: Golder	Phone:	Date: 9/28/2021	Ice Present?
Client Contact: Gary Zimmerman / Joseph Xi		No. of Coolers:	Cooler Temps: 3.2; 5.1
Client Project Name: Landsburg			
Client Project #: 923100000 7.2021	Samplers: T. Doggett / J. Xi		

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

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs (Client List)	Total Metals (Client List D)	1,4 Dioxane	TPH-HCID (Hold Follow-ups)					Notes/Comments
LMW-2-0921	9/28/2021	1150	GW	12	X	X	X	X					Analyze in accordance w/ MSA between Golder & ARI
LMW-2-0921-D		1200	GW	12	X	X	X	X					
LMW-4-0921		1325	GW	36	X	X	X	✓					Extra for MS/MSD
LMW-13R-0921	↓	1505	GW	12	X	X	X	X					
Trip Blank-1	↓	—	—	3	X								

Comments/Special Instructions
- Ecology EIM EDD
- Client specific RLs/ Analyte List
- Hold TPH follow ups

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature) Turner Doggett	(Signature) D. Lomakin	(Signature)	(Signature)
Printed Name: Turner Doggett	Printed Name: Dimitri Lomakin	Printed Name:	Printed Name:
Company: Golder	Company: ARI	Company:	Company:
Date & Time: 9/28/2021 1650	Date & Time: 09/28/21 1650	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-2-0921	21I0413-01	Water	28-Sep-2021 11:50	28-Sep-2021 16:50
LMW-2-0921-D	21I0413-02	Water	28-Sep-2021 12:00	28-Sep-2021 16:50
LMW-4-0921	21I0413-03	Water	28-Sep-2021 13:25	28-Sep-2021 16:50
LMW-13R-0921	21I0413-04	Water	28-Sep-2021 15:05	28-Sep-2021 16:50
Trip Blank-1	21I0413-05	Water	28-Sep-2021 11:50	28-Sep-2021 16:50

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

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 with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) contained hexachloro-1,3-Butadiene. Associated samples that contain analyte have been flagged with a "B" qualifer.

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

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.

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.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

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

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

Total Metals - EPA Method 6010D, 200.8 and 7470A

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

Initial and continuing calibrations were within method requirements.

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

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

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 9/29/2021 8:34:16AM

WORK ORDER

21I0413

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** Landsburg

Preservation Confirmation

Container ID	Container Type	pH	
21I0413-01 A	Glass NM, Amber, 500 mL		
21I0413-01 B	Glass NM, Amber, 500 mL		
21I0413-01 C	Glass NM, Amber, 500 mL		
21I0413-01 D	Glass NM, Amber, 500 mL		
21I0413-01 E	Glass NM, Amber, 500 mL		
21I0413-01 F	Glass NM, Amber, 500 mL		
21I0413-01 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-01 H	VOA Vial, Clear, 40 mL, HCL		
21I0413-01 I	VOA Vial, Clear, 40 mL, HCL		
21I0413-01 J	VOA Vial, Clear, 40 mL, HCL		
21I0413-01 K	VOA Vial, Clear, 40 mL, HCL		
21I0413-01 L	VOA Vial, Clear, 40 mL, HCL		
21I0413-02 A	Glass NM, Amber, 500 mL		
21I0413-02 B	Glass NM, Amber, 500 mL		
21I0413-02 C	Glass NM, Amber, 500 mL		
21I0413-02 D	Glass NM, Amber, 500 mL		
21I0413-02 E	Glass NM, Amber, 500 mL		
21I0413-02 F	Glass NM, Amber, 500 mL		
21I0413-02 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-02 H	VOA Vial, Clear, 40 mL, HCL		
21I0413-02 I	VOA Vial, Clear, 40 mL, HCL		
21I0413-02 J	VOA Vial, Clear, 40 mL, HCL		
21I0413-02 K	VOA Vial, Clear, 40 mL, HCL		
21I0413-02 L	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 A	Glass NM, Amber, 500 mL		
21I0413-03 AA	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AB	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AC	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AD	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AE	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AF	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AG	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AH	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 AI	VOA Vial, Clear, 40 mL, HCL		

Reviewed By

Date

WORK ORDER

21I0413

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** Landsburg

21I0413-03 AJ	VOA Vial, Clear, 40 mL, HCL		
21I0413-03 B	Glass NM, Amber, 500 mL		
21I0413-03 C	Glass NM, Amber, 500 mL		
21I0413-03 D	Glass NM, Amber, 500 mL		
21I0413-03 E	Glass NM, Amber, 500 mL		
21I0413-03 F	Glass NM, Amber, 500 mL		
21I0413-03 G	Glass NM, Amber, 500 mL		
21I0413-03 H	Glass NM, Amber, 500 mL		
21I0413-03 I	Glass NM, Amber, 500 mL		
21I0413-03 J	Glass NM, Amber, 500 mL		
21I0413-03 K	Glass NM, Amber, 500 mL		
21I0413-03 L	Glass NM, Amber, 500 mL		
21I0413-03 M	Glass NM, Amber, 500 mL		
21I0413-03 N	Glass NM, Amber, 500 mL		
21I0413-03 O	Glass NM, Amber, 500 mL		
21I0413-03 P	Glass NM, Amber, 500 mL		
21I0413-03 Q	Glass NM, Amber, 500 mL		
21I0413-03 R	Glass NM, Amber, 500 mL		
21I0413-03 S	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-03 T	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-03 U	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-03 V	VOA Vial, Clear, 40 mL, HCL	Bubble	
21I0413-03 W	VOA Vial, Clear, 40 mL, HCL	Bubble	
21I0413-03 X	VOA Vial, Clear, 40 mL, HCL	Bubble	
21I0413-03 Y	VOA Vial, Clear, 40 mL, HCL	Bubble	
21I0413-03 Z	VOA Vial, Clear, 40 mL, HCL		
21I0413-04 A	Glass NM, Amber, 500 mL		
21I0413-04 B	Glass NM, Amber, 500 mL		
21I0413-04 C	Glass NM, Amber, 500 mL		
21I0413-04 D	Glass NM, Amber, 500 mL		
21I0413-04 E	Glass NM, Amber, 500 mL		
21I0413-04 F	Glass NM, Amber, 500 mL		
21I0413-04 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21I0413-04 H	VOA Vial, Clear, 40 mL, HCL	Bubble	
21I0413-04 I	VOA Vial, Clear, 40 mL, HCL		
21I0413-04 J	VOA Vial, Clear, 40 mL, HCL		

Reviewed By

Date

WORK ORDER

21I0413

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates **Project Manager: Kelly Bottem**

Project: Landsburg **Project Number: Landsburg**

21I0413-04 K	VOA Vial, Clear, 40 mL, HCL
21I0413-04 L	VOA Vial, Clear, 40 mL, HCL
21I0413-05 A	VOA Vial, Clear, 40 mL, HCL
21I0413-05 B	VOA Vial, Clear, 40 mL, HCL
21I0413-05 C	VOA Vial, Clear, 40 mL, HCL

Preservation Confirmed By

09/29/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
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: 2170413

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 1650 — 3.2 3.1

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

Temp Gun ID#: D00 2565

Cooler Accepted by: DC Date: 09/28/21 Time: 1650

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	09/20/2021	

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

Samples Logged by: JSW Date: 09/29/2021 Time: 0757 Labels checked by: JSW

*** 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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:50
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21I0413-01 L
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:50

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:01

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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:50
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:01

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 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*87.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/28/2021 11:50

Instrument: NT6 Analyst: JZ — Analyzed: 10/11/2021 18:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21I0413-01 C 01

Preparation Batch: BJJ0091 — Sample Size: 500 mL

Prepared: 10/05/2021 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.0	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*62.4*	*%*	

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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 11:50

Instrument: FID4 Analyst: TWC — Analyzed: 09/30/2021 16:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21I0413-01 A 01

Preparation Batch: BJI0861 — Sample Size: 500 mL

Prepared: 09/30/2021 — 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 %*	*94.8*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*94.8*	*%*	

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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 11:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-01 G 02
Preparation Batch: BJJ0401 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 11:50
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-01 G 02
Preparation Batch: BJJ0401 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 11:50
Instrument: ICP2 Analyst: MVP — Analyzed: 10/12/2021 18:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-01 G 01
Preparation Batch: BJJ0272 — Sample Size: 25 mL
Prepared: 10/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Calcium	7440-70-2	1	0.500	111	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	69.2	mg/L	
Manganese	7439-96-5	1	0.0100	0.227	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.55	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	20.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 11:50
Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2021 15:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21I0413-01 G
Preparation Batch: BJJ0038 — Sample Size: 20 mL
Prepared: 10/01/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921

21I0413-01RE1 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 11:50
Instrument: ICP2 Analyst: MVP — Analyzed: 10/18/2021 17:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-01RE1 G 03
Preparation Batch: BJJ0462 — Sample Size: 25 mL
Prepared: 10/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Cadmium	7440-43-9	1	0.0020	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 12:00
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21I0413-02 L
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 12:00

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:22

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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: LH

Sampled: 09/28/2021 12:00
Analyzed: 10/06/2021 19:22

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 %*	*110*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*87.2*	*%*	
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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/28/2021 12:00

Instrument: NT6 Analyst: JZ — Analyzed: 10/11/2021 18:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21I0413-02 C 01

Preparation Batch: BJJ0091 — Sample Size: 500 mL

Prepared: 10/05/2021 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.9	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*57.2*	*%*	

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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 12:00

Instrument: FID4 Analyst: TWC — Analyzed: 09/30/2021 16:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21I0413-02 A 01

Preparation Batch: BJI0861 — Sample Size: 500 mL

Prepared: 09/30/2021 — 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 %*	*106*	*%*	

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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 12:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-02 G 02

Preparation Batch: BJJ0401 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 12:00

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-02 G 02

Preparation Batch: BJJ0401 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 12:00
Instrument: ICP2 Analyst: MVP — Analyzed: 10/12/2021 18:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-02 G 01
Preparation Batch: BJJ0272 — Sample Size: 25 mL
Prepared: 10/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Calcium	7440-70-2	1	0.500	111	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	65.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.216	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.47	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	20.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 12:00

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2021 15:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21I0413-02 G

Preparation Batch: BJJ0038 — Sample Size: 20 mL

Prepared: 10/01/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	27-Oct-2021 12:20

LMW-2-0921-D

21I0413-02RE1 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 12:00

Instrument: ICP2 Analyst: MVP — Analyzed: 10/18/2021 17:39

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-02RE1 G 03

Preparation Batch: BJJ0462 — Sample Size: 25 mL

Prepared: 10/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Cadmium	7440-43-9	1	0.0020	ND	mg/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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 13:25
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21I0413-03 Z
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 13:25

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:42

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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 13:25

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 19:42

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 %*	*112*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*88.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/28/2021 13:25
Instrument: NT6 Analyst: JZ — Analyzed: 10/11/2021 19:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21I0413-03 D 01
Preparation Batch: BJJ0091 — Sample Size: 500 mL
Prepared: 10/05/2021 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	2.0	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*56.6*	*%*	

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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 13:25

Instrument: FID4 Analyst: TWC — Analyzed: 09/30/2021 16:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21I0413-03 A 01

Preparation Batch: BJI0861 — Sample Size: 500 mL

Prepared: 09/30/2021 — 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 %*	*98.6*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*94.2*	*%*	

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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 13:25
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 22:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-03 U 02
Preparation Batch: BJJ0401 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 13:25
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-03 U 02
Preparation Batch: BJJ0401 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 13:25
Instrument: ICP2 Analyst: MVP — Analyzed: 10/12/2021 18:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-03 U 01
Preparation Batch: BJJ0272 — Sample Size: 25 mL
Prepared: 10/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Calcium	7440-70-2	1	0.500	110	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.300	mg/L	
Magnesium	7439-95-4	1	0.500	68.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.210	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.65	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	21.3	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 13:25
Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2021 14:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21I0413-03 U
Preparation Batch: BJJ0038 — Sample Size: 20 mL
Prepared: 10/01/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	27-Oct-2021 12:20

LMW-4-0921

21I0413-03RE1 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 13:25
Instrument: ICP2 Analyst: MVP — Analyzed: 10/18/2021 17:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-03RE1 U 03
Preparation Batch: BJJ0462 — Sample Size: 25 mL
Prepared: 10/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Cadmium	7440-43-9	1	0.0020	ND	mg/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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 15:05
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 20:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21I0413-04 I
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 15:05

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 20:02

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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 15:05

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 20:02

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 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*89.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*107*	*%*	

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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/28/2021 15:05
Instrument: NT6 Analyst: JZ — Analyzed: 10/11/2021 20:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21I0413-04 D 01
Preparation Batch: BJJ0091 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*63.2*	*%*	

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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 15:05

Instrument: FID4 Analyst: TWC — Analyzed: 09/30/2021 17:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21I0413-04 A 01

Preparation Batch: BJI0861 — Sample Size: 500 mL

Prepared: 09/30/2021 — 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 %*	*94.7*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*94.8*	*%*	

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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 15:05

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 22:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-04 G 02

Preparation Batch: BJJ0401 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 15:05

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/18/2021 19:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21I0413-04 G 02

Preparation Batch: BJJ0401 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 15:05

Instrument: ICP2 Analyst: MVP — Analyzed: 10/12/2021 18:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-04 G 01

Preparation Batch: BJJ0272 — Sample Size: 25 mL

Prepared: 10/11/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Calcium	7440-70-2	1	0.500	83.3	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	1.08	mg/L	
Magnesium	7439-95-4	1	0.500	37.4	mg/L	
Manganese	7439-96-5	1	0.0100	0.0316	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.16	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	83.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 15:05

Instrument: HYDRA Analyst: ML — Analyzed: 10/06/2021 15:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21I0413-04 G

Preparation Batch: BJJ0038 — Sample Size: 20 mL

Prepared: 10/01/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	27-Oct-2021 12:20

LMW-13R-0921

21I0413-04RE1 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 15:05

Instrument: ICP2 Analyst: MVP — Analyzed: 10/18/2021 18:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21I0413-04RE1 G 03

Preparation Batch: BJJ0462 — Sample Size: 25 mL

Prepared: 10/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Cadmium	7440-43-9	1	0.0020	ND	mg/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	27-Oct-2021 12:20

Trip Blank-1

21I0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:50

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 13:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21I0413-05 A

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	27-Oct-2021 12:20

Trip Blank-1

21I0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: LH

Sampled: 09/28/2021 11:50
Analyzed: 10/06/2021 13:08

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	27-Oct-2021 12:20

Trip Blank-1

21I0413-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:50

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 13:08

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 %*	*96.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27							
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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27							
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	0.60	0.50	ug/L							
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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.10		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.64		ug/L	*5.00*		*92.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.24		ug/L	*5.00*		*105*	*80-120*			
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
Chloromethane	9.99	0.50	ug/L	10.0		99.9	60-138			
Vinyl Chloride	9.79	0.10	ug/L	10.0		97.9	66-133			
Bromomethane	10.3	1.00	ug/L	10.0		103	72-131			
Chloroethane	9.70	0.20	ug/L	10.0		97.0	60-155			
Trichlorofluoromethane	12.1	0.20	ug/L	10.0		121	62-141			
Acrolein	49.1	5.00	ug/L	50.0		98.2	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.28	0.20	ug/L	10.0		92.8	76-129			
Acetone	47.4	5.00	ug/L	50.0		94.9	58-142			
1,1-Dichloroethene	9.36	0.20	ug/L	10.0		93.6	69-135			
Iodomethane	9.90	1.00	ug/L	10.0		99.0	56-147			
Methylene Chloride	9.49	1.00	ug/L	10.0		94.9	65-135			
Acrylonitrile	10.9	1.00	ug/L	10.0		109	64-134			
Carbon Disulfide	9.46	0.20	ug/L	10.0		94.6	78-125			
trans-1,2-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	78-128			
Vinyl Acetate	8.49	0.20	ug/L	10.0		84.9	55-138			Q
1,1-Dichloroethane	9.78	0.20	ug/L	10.0		97.8	76-124			
2-Butanone	50.8	5.00	ug/L	50.0		102	61-140			
2,2-Dichloropropane	9.42	0.20	ug/L	10.0		94.2	66-147			
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	80-121			
Chloroform	9.84	0.20	ug/L	10.0		98.4	80-122			
Bromochloromethane	9.86	0.20	ug/L	10.0		98.6	80-121			
1,1,1-Trichloroethane	10.2	0.20	ug/L	10.0		102	79-123			
1,1-Dichloropropene	10.7	0.10	ug/L	10.0		107	80-127			
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137			
1,2-Dichloroethane	9.70	0.20	ug/L	10.0		97.0	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	9.50	0.20	ug/L	10.0		95.0	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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,2-Dichloropropane	9.60	0.20	ug/L	10.0		96.0	80-120			
Bromodichloromethane	9.94	0.20	ug/L	10.0		99.4	80-121			
Dibromomethane	9.90	0.20	ug/L	10.0		99.0	80-120			
2-Chloroethyl vinyl ether	8.14	1.00	ug/L	10.0		81.4	64-120			Q
4-Methyl-2-Pentanone	52.8	2.50	ug/L	50.0		106	67-133			
cis-1,3-Dichloropropene	11.1	0.20	ug/L	10.0		111	80-124			
Toluene	9.68	0.20	ug/L	10.0		96.8	80-120			
trans-1,3-Dichloropropene	8.94	0.20	ug/L	10.0		89.4	71-127			
2-Hexanone	55.4	5.00	ug/L	50.0		111	69-133			
1,1,2-Trichloroethane	9.80	0.20	ug/L	10.0		98.0	80-121			
1,3-Dichloropropane	9.99	0.10	ug/L	10.0		99.9	80-120			
Tetrachloroethene	9.31	0.20	ug/L	10.0		93.1	80-120			
Dibromochloromethane	10.6	0.20	ug/L	10.0		106	65-135			
1,2-Dibromoethane	10.9	0.10	ug/L	10.0		109	80-121			
Chlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	21.6	0.40	ug/L	20.0		108	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Xylenes, total	32.6	0.60	ug/L	30.0		109	76-127			
Styrene	10.8	0.20	ug/L	10.0		108	80-124			
Bromoform	9.28	0.20	ug/L	10.0		92.8	51-134			
1,1,2,2-Tetrachloroethane	9.63	0.20	ug/L	10.0		96.3	77-123			
1,2,3-Trichloropropane	9.89	0.25	ug/L	10.0		98.9	76-125			
trans-1,4-Dichloro 2-Butene	8.27	1.00	ug/L	10.0		82.7	55-129			
n-Propylbenzene	11.1	0.20	ug/L	10.0		111	78-130			
Bromobenzene	9.96	0.20	ug/L	10.0		99.6	80-120			
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128			
2-Chlorotoluene	10.4	0.10	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121			
t-Butylbenzene	11.4	0.20	ug/L	10.0		114	78-125			
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129			
1,2,4-Trimethylbenzene	11.7	0.20	ug/L	10.0		117	80-127			
s-Butylbenzene	11.0	0.20	ug/L	10.0		110	78-129			
4-Isopropyl Toluene	11.6	0.20	ug/L	10.0		116	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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129			
1,2-Dichlorobenzene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,2-Dibromo-3-chloropropane	8.99	0.50	ug/L	10.0		89.9	62-123			
1,2,4-Trichlorobenzene	8.93	0.50	ug/L	10.0		89.3	64-124			Q
Hexachloro-1,3-Butadiene	11.0	0.50	ug/L	10.0		110	58-123			B
Naphthalene	8.51	0.50	ug/L	10.0		85.1	50-134			Q
1,2,3-Trichlorobenzene	9.13	0.50	ug/L	10.0		91.3	49-133			
Dichlorodifluoromethane	11.1	0.20	ug/L	10.0		111	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.82		ug/L	*5.00*		*96.4*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.99		ug/L	*5.00*		*99.9*	*80-120*			
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloromethane	9.98	0.50	ug/L	10.0		99.8	60-138	0.01	30	
Vinyl Chloride	9.35	0.10	ug/L	10.0		93.5	66-133	4.58	30	
Bromomethane	9.85	1.00	ug/L	10.0		98.5	72-131	4.82	30	
Chloroethane	8.92	0.20	ug/L	10.0		89.2	60-155	8.46	30	
Trichlorofluoromethane	11.3	0.20	ug/L	10.0		113	62-141	6.86	30	
Acrolein	46.6	5.00	ug/L	50.0		93.2	52-190	5.18	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.99	0.20	ug/L	10.0		89.9	76-129	3.19	30	
Acetone	45.0	5.00	ug/L	50.0		89.9	58-142	5.35	30	
1,1-Dichloroethene	9.05	0.20	ug/L	10.0		90.5	69-135	3.29	30	
Iodomethane	9.50	1.00	ug/L	10.0		95.0	56-147	4.05	30	
Methylene Chloride	9.19	1.00	ug/L	10.0		91.9	65-135	3.14	30	
Acrylonitrile	9.99	1.00	ug/L	10.0		99.9	64-134	8.50	30	
Carbon Disulfide	9.03	0.20	ug/L	10.0		90.3	78-125	4.73	30	
trans-1,2-Dichloroethene	9.04	0.20	ug/L	10.0		90.4	78-128	4.09	30	
Vinyl Acetate	8.23	0.20	ug/L	10.0		82.3	55-138	3.19	30	Q
1,1-Dichloroethane	9.38	0.20	ug/L	10.0		93.8	76-124	4.17	30	
2-Butanone	47.7	5.00	ug/L	50.0		95.3	61-140	6.32	30	
2,2-Dichloropropane	8.88	0.20	ug/L	10.0		88.8	66-147	5.89	30	
cis-1,2-Dichloroethene	9.79	0.20	ug/L	10.0		97.9	80-121	2.70	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloroform	9.34	0.20	ug/L	10.0		93.4	80-122	5.15	30	
Bromochloromethane	9.54	0.20	ug/L	10.0		95.4	80-121	3.25	30	
1,1,1-Trichloroethane	9.63	0.20	ug/L	10.0		96.3	79-123	5.49	30	
1,1-Dichloropropene	10.2	0.10	ug/L	10.0		102	80-127	4.79	30	
Carbon tetrachloride	9.63	0.20	ug/L	10.0		96.3	53-137	4.66	30	
1,2-Dichloroethane	9.17	0.20	ug/L	10.0		91.7	75-123	5.64	30	
Benzene	9.81	0.20	ug/L	10.0		98.1	80-120	3.48	30	
Trichloroethene	9.37	0.20	ug/L	10.0		93.7	80-120	1.40	30	
1,2-Dichloropropane	9.49	0.20	ug/L	10.0		94.9	80-120	1.17	30	
Bromodichloromethane	9.62	0.20	ug/L	10.0		96.2	80-121	3.33	30	
Dibromomethane	9.77	0.20	ug/L	10.0		97.7	80-120	1.36	30	
2-Chloroethyl vinyl ether	7.91	1.00	ug/L	10.0		79.1	64-120	2.96	30	Q
4-Methyl-2-Pentanone	51.9	2.50	ug/L	50.0		104	67-133	1.89	30	
cis-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-124	3.78	30	
Toluene	9.41	0.20	ug/L	10.0		94.1	80-120	2.85	30	
trans-1,3-Dichloropropene	8.58	0.20	ug/L	10.0		85.8	71-127	4.14	30	
2-Hexanone	54.0	5.00	ug/L	50.0		108	69-133	2.69	30	
1,1,2-Trichloroethane	9.35	0.20	ug/L	10.0		93.5	80-121	4.72	30	
1,3-Dichloropropane	9.68	0.10	ug/L	10.0		96.8	80-120	3.14	30	
Tetrachloroethene	8.91	0.20	ug/L	10.0		89.1	80-120	4.42	30	
Dibromochloromethane	10.3	0.20	ug/L	10.0		103	65-135	3.43	30	
1,2-Dibromoethane	10.5	0.10	ug/L	10.0		105	80-121	3.48	30	
Chlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	5.69	30	
Ethylbenzene	10.0	0.20	ug/L	10.0		100	80-120	4.00	30	
1,1,1,2-Tetrachloroethane	9.87	0.20	ug/L	10.0		98.7	80-120	4.01	30	
m,p-Xylene	20.9	0.40	ug/L	20.0		104	80-121	3.36	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	4.30	30	
Xylenes, total	31.4	0.60	ug/L	30.0		105	76-127	3.68	30	
Styrene	10.4	0.20	ug/L	10.0		104	80-124	3.27	30	
Bromoform	8.69	0.20	ug/L	10.0		86.9	51-134	6.57	30	
1,1,2,2-Tetrachloroethane	9.34	0.20	ug/L	10.0		93.4	77-123	3.04	30	
1,2,3-Trichloropropane	9.60	0.25	ug/L	10.0		96.0	76-125	2.96	30	
trans-1,4-Dichloro 2-Butene	8.40	1.00	ug/L	10.0		84.0	55-129	1.58	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	6.09	30	
Bromobenzene	9.54	0.20	ug/L	10.0		95.4	80-120	4.29	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Isopropyl Benzene	11.0	0.20	ug/L	10.0		110	80-128	4.96	30	
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122	3.59	30	
4-Chlorotoluene	9.89	0.20	ug/L	10.0		98.9	80-121	5.11	30	
t-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-125	5.57	30	
1,3,5-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-129	5.44	30	
1,2,4-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-127	5.30	30	
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129	4.54	30	
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0		110	79-130	5.85	30	
1,3-Dichlorobenzene	9.76	0.20	ug/L	10.0		97.6	80-120	3.34	30	
1,4-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120	3.45	30	
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129	4.08	30	
1,2-Dichlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	1.89	30	
1,2-Dibromo-3-chloropropane	8.80	0.50	ug/L	10.0		88.0	62-123	2.13	30	
1,2,4-Trichlorobenzene	8.30	0.50	ug/L	10.0		83.0	64-124	7.22	30	Q
Hexachloro-1,3-Butadiene	9.90	0.50	ug/L	10.0		99.0	58-123	10.10	30	B
Naphthalene	8.23	0.50	ug/L	10.0		82.3	50-134	3.35	30	Q
1,2,3-Trichlorobenzene	8.54	0.50	ug/L	10.0		85.4	49-133	6.63	30	
Dichlorodifluoromethane	11.2	0.20	ug/L	10.0		112	48-147	0.86	30	
Surrogate: 1,2-Dichloroethane-d4	4.91		ug/L	*5.00*		*98.3*	*80-129*			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	*5.00*		*99.5*	*80-120*			
Matrix Spike (BJJ0153-MS1)	**Source: 21I0413-03**			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:23						
Chloromethane	11.8	0.50	ug/L	10.0	ND	118	60-138			
Vinyl Chloride	10.8	0.10	ug/L	10.0	ND	108	66-133			
Bromomethane	12.1	1.00	ug/L	10.0	ND	121	72-131			
Chloroethane	11.2	0.20	ug/L	10.0	ND	112	60-155			
Trichlorofluoromethane	15.3	0.20	ug/L	10.0	ND	153	62-141			*
Acrolein	53.8	5.00	ug/L	50.0	ND	108	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.4	0.20	ug/L	10.0	ND	114	76-129			
Acetone	61.4	5.00	ug/L	50.0	ND	123	58-142			
1,1-Dichloroethene	11.4	0.20	ug/L	10.0	ND	114	69-135			
Iodomethane	12.2	1.00	ug/L	10.0	ND	122	56-147			
Methylene Chloride	11.4	1.00	ug/L	10.0	ND	114	65-135			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJJ0153-MS1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:23							
Acrylonitrile	11.9	1.00	ug/L	10.0	ND	119	64-134			
Carbon Disulfide	11.7	0.20	ug/L	10.0	ND	117	78-125			
trans-1,2-Dichloroethene	11.5	0.20	ug/L	10.0	ND	115	78-128			
Vinyl Acetate	6.17	0.20	ug/L	10.0	ND	61.7	55-138			Q
1,1-Dichloroethane	11.0	0.20	ug/L	10.0	ND	110	76-124			
2-Butanone	60.2	5.00	ug/L	50.0	ND	120	61-140			
2,2-Dichloropropane	9.36	0.20	ug/L	10.0	ND	93.6	66-147			
cis-1,2-Dichloroethene	11.4	0.20	ug/L	10.0	ND	114	80-121			
Chloroform	11.2	0.20	ug/L	10.0	ND	112	80-122			
Bromochloromethane	11.5	0.20	ug/L	10.0	ND	115	80-121			
1,1,1-Trichloroethane	11.4	0.20	ug/L	10.0	ND	114	79-123			
1,1-Dichloropropene	11.4	0.10	ug/L	10.0	ND	114	80-127			
Carbon tetrachloride	11.3	0.20	ug/L	10.0	ND	113	53-137			
1,2-Dichloroethane	11.3	0.20	ug/L	10.0	ND	113	75-123			
Benzene	11.7	0.20	ug/L	10.0	ND	117	80-120			
Trichloroethene	10.6	0.20	ug/L	10.0	ND	106	80-120			
1,2-Dichloropropane	11.1	0.20	ug/L	10.0	ND	111	80-120			
Bromodichloromethane	11.4	0.20	ug/L	10.0	ND	114	80-121			
Dibromomethane	11.5	0.20	ug/L	10.0	ND	115	80-120			
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	64.5	2.50	ug/L	50.0	ND	129	67-133			
cis-1,3-Dichloropropene	11.8	0.20	ug/L	10.0	ND	118	80-124			
Toluene	11.3	0.20	ug/L	10.0	ND	113	80-120			
trans-1,3-Dichloropropene	10.2	0.20	ug/L	10.0	ND	102	71-127			
2-Hexanone	64.2	5.00	ug/L	50.0	ND	128	69-133			
1,1,2-Trichloroethane	11.7	0.20	ug/L	10.0	ND	117	80-121			
1,3-Dichloropropane	11.2	0.10	ug/L	10.0	ND	112	80-120			
Tetrachloroethene	10.8	0.20	ug/L	10.0	ND	108	80-120			
Dibromochloromethane	11.9	0.20	ug/L	10.0	ND	119	65-135			
1,2-Dibromoethane	12.5	0.10	ug/L	10.0	ND	125	80-121			*
Chlorobenzene	11.6	0.20	ug/L	10.0	ND	116	80-120			
Ethylbenzene	11.9	0.20	ug/L	10.0	ND	119	80-120			
1,1,1,2-Tetrachloroethane	11.6	0.20	ug/L	10.0	ND	116	80-120			
m,p-Xylene	24.6	0.40	ug/L	20.0	ND	123	80-121			*
o-Xylene	12.1	0.20	ug/L	10.0	ND	121	80-121			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJJ0153-MS1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:23							
Xylenes, total	36.7	0.60	ug/L	30.0	ND	122	76-127			
Styrene	12.6	0.20	ug/L	10.0	ND	126	80-124			*
Bromoform	10.0	0.20	ug/L	10.0	ND	100	51-134			
1,1,2,2-Tetrachloroethane	11.1	0.20	ug/L	10.0	ND	111	77-123			
1,2,3-Trichloropropane	11.3	0.25	ug/L	10.0	ND	113	76-125			
trans-1,4-Dichloro 2-Butene	8.74	1.00	ug/L	10.0	ND	87.4	55-129			
n-Propylbenzene	12.0	0.20	ug/L	10.0	ND	120	78-130			
Bromobenzene	10.9	0.20	ug/L	10.0	ND	109	80-120			
Isopropyl Benzene	12.3	0.20	ug/L	10.0	ND	123	80-128			
2-Chlorotoluene	11.3	0.10	ug/L	10.0	ND	113	78-122			
4-Chlorotoluene	11.4	0.20	ug/L	10.0	ND	114	80-121			
t-Butylbenzene	12.2	0.20	ug/L	10.0	ND	122	78-125			
1,3,5-Trimethylbenzene	12.4	0.20	ug/L	10.0	ND	124	80-129			
1,2,4-Trimethylbenzene	12.8	0.20	ug/L	10.0	ND	128	80-127			*
s-Butylbenzene	12.1	0.20	ug/L	10.0	ND	121	78-129			
4-Isopropyl Toluene	12.4	0.20	ug/L	10.0	ND	124	79-130			
1,3-Dichlorobenzene	11.3	0.20	ug/L	10.0	ND	113	80-120			
1,4-Dichlorobenzene	10.6	0.20	ug/L	10.0	ND	106	80-120			
n-Butylbenzene	12.3	0.20	ug/L	10.0	ND	123	74-129			
1,2-Dichlorobenzene	11.0	0.20	ug/L	10.0	ND	110	80-120			
1,2-Dibromo-3-chloropropane	9.89	0.50	ug/L	10.0	ND	98.9	62-123			
1,2,4-Trichlorobenzene	9.56	0.50	ug/L	10.0	ND	95.6	64-124			Q
Hexachloro-1,3-Butadiene	10.6	0.50	ug/L	10.0	ND	106	58-123			B
Naphthalene	9.39	0.50	ug/L	10.0	ND	93.9	50-134			Q
1,2,3-Trichlorobenzene	9.77	0.50	ug/L	10.0	ND	97.7	49-133			
Dichlorodifluoromethane	11.9	0.20	ug/L	10.0	ND	119	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.01		ug/L	*5.00*	*5.59*	*100*	*80-129*			
Surrogate: Toluene-d8	4.97		ug/L	*5.00*	*4.79*	*99.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.16		ug/L	*5.00*	*4.42*	*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.90		ug/L	*5.00*	*5.24*	*98.1*	*80-120*			

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

Matrix Spike Dup (BJJ0153-MSD1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:44							
Chloromethane	12.2	0.50	ug/L	10.0	ND	122	60-138	3.28	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0153-MSD1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:44							
Vinyl Chloride	11.1	0.10	ug/L	10.0	ND	111	66-133	2.50	30	
Bromomethane	12.1	1.00	ug/L	10.0	ND	121	72-131	0.38	30	
Chloroethane	11.1	0.20	ug/L	10.0	ND	111	60-155	1.35	30	
Trichlorofluoromethane	15.0	0.20	ug/L	10.0	ND	150	62-141	1.80	30	*
Acrolein	53.4	5.00	ug/L	50.0	ND	107	52-190	0.79	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.9	0.20	ug/L	10.0	ND	109	76-129	3.96	30	
Acetone	59.8	5.00	ug/L	50.0	ND	120	58-142	2.57	30	
1,1-Dichloroethene	11.0	0.20	ug/L	10.0	ND	110	69-135	3.40	30	
Iodomethane	11.9	1.00	ug/L	10.0	ND	119	56-147	2.55	30	
Methylene Chloride	11.1	1.00	ug/L	10.0	ND	111	65-135	3.18	30	
Acrylonitrile	11.1	1.00	ug/L	10.0	ND	111	64-134	7.57	30	
Carbon Disulfide	11.4	0.20	ug/L	10.0	ND	114	78-125	3.04	30	
trans-1,2-Dichloroethene	11.0	0.20	ug/L	10.0	ND	110	78-128	4.95	30	
Vinyl Acetate	6.16	0.20	ug/L	10.0	ND	61.6	55-138	0.28	30	Q
1,1-Dichloroethane	10.8	0.20	ug/L	10.0	ND	108	76-124	1.53	30	
2-Butanone	60.7	5.00	ug/L	50.0	ND	121	61-140	0.77	30	
2,2-Dichloropropane	9.13	0.20	ug/L	10.0	ND	91.3	66-147	2.53	30	
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0	ND	107	80-121	6.26	30	
Chloroform	10.7	0.20	ug/L	10.0	ND	107	80-122	4.14	30	
Bromochloromethane	11.1	0.20	ug/L	10.0	ND	111	80-121	3.02	30	
1,1,1-Trichloroethane	10.9	0.20	ug/L	10.0	ND	109	79-123	3.89	30	
1,1-Dichloropropene	11.4	0.10	ug/L	10.0	ND	114	80-127	0.36	30	
Carbon tetrachloride	11.1	0.20	ug/L	10.0	ND	111	53-137	2.18	30	
1,2-Dichloroethane	11.2	0.20	ug/L	10.0	ND	112	75-123	1.09	30	
Benzene	11.6	0.20	ug/L	10.0	ND	116	80-120	0.80	30	
Trichloroethene	10.8	0.20	ug/L	10.0	ND	108	80-120	1.45	30	
1,2-Dichloropropane	11.2	0.20	ug/L	10.0	ND	112	80-120	0.57	30	
Bromodichloromethane	11.4	0.20	ug/L	10.0	ND	114	80-121	0.45	30	
Dibromomethane	11.5	0.20	ug/L	10.0	ND	115	80-120	0.17	30	
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	65.0	2.50	ug/L	50.0	ND	130	67-133	0.69	30	
cis-1,3-Dichloropropene	11.6	0.20	ug/L	10.0	ND	116	80-124	1.37	30	
Toluene	11.2	0.20	ug/L	10.0	ND	112	80-120	0.65	30	
trans-1,3-Dichloropropene	10.3	0.20	ug/L	10.0	ND	103	71-127	0.23	30	
2-Hexanone	60.7	5.00	ug/L	50.0	ND	121	69-133	5.61	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0153-MSD1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021	Analyzed: 06-Oct-2021 20:44						
1,1,2-Trichloroethane	11.6	0.20	ug/L	10.0	ND	116	80-121	0.87	30	
1,3-Dichloropropane	11.1	0.10	ug/L	10.0	ND	111	80-120	0.77	30	
Tetrachloroethene	10.2	0.20	ug/L	10.0	ND	102	80-120	5.57	30	
Dibromochloromethane	11.9	0.20	ug/L	10.0	ND	119	65-135	0.09	30	
1,2-Dibromoethane	12.3	0.10	ug/L	10.0	ND	123	80-121	1.24	30	*
Chlorobenzene	11.4	0.20	ug/L	10.0	ND	114	80-120	2.20	30	
Ethylbenzene	11.7	0.20	ug/L	10.0	ND	117	80-120	1.36	30	
1,1,1,2-Tetrachloroethane	11.3	0.20	ug/L	10.0	ND	113	80-120	2.27	30	
m,p-Xylene	24.3	0.40	ug/L	20.0	ND	122	80-121	1.07	30	*
o-Xylene	12.2	0.20	ug/L	10.0	ND	122	80-121	0.39	30	*
Xylenes, total	36.5	0.60	ug/L	30.0	ND	122	76-127	0.59	30	
Styrene	12.2	0.20	ug/L	10.0	ND	122	80-124	3.43	30	
Bromoform	10.1	0.20	ug/L	10.0	ND	101	51-134	0.41	30	
1,1,2,2-Tetrachloroethane	11.0	0.20	ug/L	10.0	ND	110	77-123	1.43	30	
1,2,3-Trichloropropane	11.1	0.25	ug/L	10.0	ND	111	76-125	1.95	30	
trans-1,4-Dichloro 2-Butene	8.16	1.00	ug/L	10.0	ND	81.6	55-129	6.82	30	
n-Propylbenzene	11.7	0.20	ug/L	10.0	ND	117	78-130	2.91	30	
Bromobenzene	10.8	0.20	ug/L	10.0	ND	108	80-120	0.98	30	
Isopropyl Benzene	12.0	0.20	ug/L	10.0	ND	120	80-128	2.01	30	
2-Chlorotoluene	11.4	0.10	ug/L	10.0	ND	114	78-122	0.38	30	
4-Chlorotoluene	11.5	0.20	ug/L	10.0	ND	115	80-121	1.11	30	
t-Butylbenzene	11.9	0.20	ug/L	10.0	ND	119	78-125	2.25	30	
1,3,5-Trimethylbenzene	12.2	0.20	ug/L	10.0	ND	122	80-129	1.81	30	
1,2,4-Trimethylbenzene	12.4	0.20	ug/L	10.0	ND	124	80-127	3.13	30	
s-Butylbenzene	11.8	0.20	ug/L	10.0	ND	118	78-129	2.34	30	
4-Isopropyl Toluene	12.2	0.20	ug/L	10.0	ND	122	79-130	1.36	30	
1,3-Dichlorobenzene	11.2	0.20	ug/L	10.0	ND	112	80-120	0.53	30	
1,4-Dichlorobenzene	10.4	0.20	ug/L	10.0	ND	104	80-120	1.44	30	
n-Butylbenzene	12.1	0.20	ug/L	10.0	ND	121	74-129	1.68	30	
1,2-Dichlorobenzene	10.9	0.20	ug/L	10.0	ND	109	80-120	1.15	30	
1,2-Dibromo-3-chloropropane	9.79	0.50	ug/L	10.0	ND	97.9	62-123	0.99	30	
1,2,4-Trichlorobenzene	9.80	0.50	ug/L	10.0	ND	98.0	64-124	2.46	30	Q
Hexachloro-1,3-Butadiene	11.3	0.50	ug/L	10.0	ND	113	58-123	6.76	30	B
Naphthalene	9.40	0.50	ug/L	10.0	ND	94.0	50-134	0.09	30	Q
1,2,3-Trichlorobenzene	10.1	0.50	ug/L	10.0	ND	101	49-133	3.73	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0153-MSD1)	**Source: 21I0413-03**		Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 20:44							
Dichlorodifluoromethane	13.2	0.20	ug/L	10.0	ND	132	48-147	10.50	30	
Surrogate: 1,2-Dichloroethane-d4	4.96		ug/L	*5.00*	*5.59*	*99.3*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*	*4.79*	*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.26		ug/L	*5.00*	*4.42*	*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.02		ug/L	*5.00*	*5.24*	*100*	*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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJJ0091 - 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 (BJJ0091-BLK1)				Prepared: 05-Oct-2021 Analyzed: 11-Oct-2021 17:00						
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	6.54		ug/L	*10.0*		*65.4*	*33.6-120*			
LCS (BJJ0091-BS1)				Prepared: 05-Oct-2021 Analyzed: 11-Oct-2021 17:25						
1,4-Dioxane	5.2	0.4	ug/L	10.0		51.6	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.29		ug/L	*10.0*		*62.9*	*33.6-120*			
LCS Dup (BJJ0091-BSD1)				Prepared: 05-Oct-2021 Analyzed: 11-Oct-2021 17:50						
1,4-Dioxane	5.0	0.4	ug/L	10.0		49.8	39.9-120	3.58	30	
Surrogate: 1,4-Dioxane-d8	6.10		ug/L	*10.0*		*61.0*	*33.6-120*			
Matrix Spike (BJJ0091-MS1)	**Source: 21I0413-03**			Prepared: 05-Oct-2021 Analyzed: 11-Oct-2021 19:30						
1,4-Dioxane	7.4	0.4	ug/L	10.0	2.0	54.1	35.1-120			
Surrogate: 1,4-Dioxane-d8	6.29		ug/L	*10.0*	*5.66*	*62.9*	*33.6-120*			

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

Matrix Spike Dup (BJJ0091-MSD1)	**Source: 21I0413-03**			Prepared: 05-Oct-2021 Analyzed: 11-Oct-2021 19:56						
1,4-Dioxane	7.0	0.4	ug/L	10.0	2.0	49.4	35.1-120	6.49	30	
Surrogate: 1,4-Dioxane-d8	6.05		ug/L	*10.0*	*5.66*	*60.5*	*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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BJI0861 - EPA 3510C SepF

Instrument: FID4 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJI0861-BLK1)			Prepared: 30-Sep-2021 Analyzed: 30-Sep-2021 15:16							
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	0.231		mg/L	*0.225*		*103*	*50-150*			
Surrogate: n-Triacontane	0.230		mg/L	*0.225*		*102*	*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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0038 - TWM EPA 7470A

Instrument: HYDRA Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0038-BLK1)			Prepared: 01-Oct-2021 Analyzed: 06-Oct-2021 14:49							
Mercury	ND	0.00100	mg/L							U
LCS (BJJ0038-BS1)			Prepared: 01-Oct-2021 Analyzed: 06-Oct-2021 14:52							
Mercury	0.00165	0.00100	mg/L	0.00200		82.6	80-120			
Duplicate (BJJ0038-DUP1)	**Source: 21I0413-03**		Prepared: 01-Oct-2021 Analyzed: 06-Oct-2021 14:56							
Mercury	ND	0.00100	mg/L		ND					U
Matrix Spike (BJJ0038-MS1)	**Source: 21I0413-03**		Prepared: 01-Oct-2021 Analyzed: 06-Oct-2021 14:59							
Mercury	ND	0.00100	mg/L	0.00100	ND	83.3	75-125			U

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

Matrix Spike Dup (BJJ0038-MSD1)	**Source: 21I0413-03**		Prepared: 01-Oct-2021 Analyzed: 06-Oct-2021 15:01							
Mercury	ND	0.00100	mg/L	0.00100	ND	82.2	75-125			U

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0272 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0272-BLK1)				Prepared: 11-Oct-2021 Analyzed: 12-Oct-2021 17:51						
Aluminum	ND	1.00	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Calcium	ND	0.500	mg/L							U
Chromium	ND	0.0100	mg/L							U
Cobalt	ND	0.0100	mg/L							U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Manganese	ND	0.0100	mg/L							U
Potassium	ND	0.500	mg/L							U
Silver	ND	0.0050	mg/L							U
Sodium	ND	0.500	mg/L							U
Vanadium	ND	0.0030	mg/L							U
Zinc	ND	0.0200	mg/L							U
Blank (BJJ0272-BLK2)				Prepared: 11-Oct-2021 Analyzed: 15-Oct-2021 14:39						
Barium	ND	0.500	mg/L							U
Copper	ND	0.0030	mg/L							U
Nickel	ND	0.0100	mg/L							U
LCS (BJJ0272-BS1)				Prepared: 11-Oct-2021 Analyzed: 12-Oct-2021 17:54						
Aluminum	2.35	1.00	mg/L	2.00		118	80-120			
Beryllium	0.557	0.0100	mg/L	0.500		111	80-120			
Calcium	10.5	0.500	mg/L	10.0		105	80-120			
Chromium	0.572	0.0100	mg/L	0.500		114	80-120			
Cobalt	0.563	0.0100	mg/L	0.500		113	80-120			
Copper	0.525	0.0030	mg/L	0.500		105	80-120			
Iron	2.12	0.200	mg/L	2.00		106	80-120			
Magnesium	11.7	0.500	mg/L	10.0		117	80-120			
Manganese	0.573	0.0100	mg/L	0.500		115	80-120			
Nickel	0.578	0.0100	mg/L	0.500		116	80-120			
Potassium	11.6	0.500	mg/L	10.0		116	80-120			
Silver	0.585	0.0050	mg/L	0.500		117	80-120			
Vanadium	0.548	0.0030	mg/L	0.500		110	80-120			
Zinc	0.533	0.0200	mg/L	0.500		107	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	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0272 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0272-BS2)				Prepared: 11-Oct-2021 Analyzed: 15-Oct-2021 14:42						
Barium	2.21	0.500	mg/L	2.00		110	80-120			
Sodium	11.8	0.500	mg/L	10.0		118	80-120			
Duplicate (BJJ0272-DUP1)		**Source: 21I0413-03**		Prepared: 11-Oct-2021 Analyzed: 12-Oct-2021 18:39						
Aluminum	ND	1.00	mg/L		ND					U
Beryllium	ND	0.0100	mg/L		ND					U
Calcium	113	0.500	mg/L		110			3.08	20	
Chromium	ND	0.0100	mg/L		ND					U
Cobalt	ND	0.0100	mg/L		ND					U
Copper	ND	0.0030	mg/L		ND					U
Iron	0.302	0.200	mg/L		0.300			0.60	20	
Magnesium	69.6	0.500	mg/L		68.1			2.25	20	
Manganese	0.212	0.0100	mg/L		0.210			1.20	20	
Nickel	ND	0.0100	mg/L		ND					U
Potassium	3.73	0.500	mg/L		3.65			2.39	20	
Silver	ND	0.0050	mg/L		ND					U
Sodium	21.9	0.500	mg/L		21.3			2.52	20	
Vanadium	ND	0.0030	mg/L		ND					U
Zinc	ND	0.0200	mg/L		ND					U
Duplicate (BJJ0272-DUP2)		**Source: 21I0413-03**		Prepared: 11-Oct-2021 Analyzed: 15-Oct-2021 14:47						
Barium	ND	0.500	mg/L		ND					U
Matrix Spike (BJJ0272-MS1)		**Source: 21I0413-03**		Prepared: 11-Oct-2021 Analyzed: 12-Oct-2021 18:44						
Aluminum	2.24	1.00	mg/L	2.00	ND	112	75-125			
Beryllium	0.529	0.0100	mg/L	0.500	ND	106	75-125			
Calcium	121	0.500	mg/L	10.0	110	112	75-125			
Chromium	0.550	0.0100	mg/L	0.500	ND	110	75-125			
Cobalt	0.497	0.0100	mg/L	0.500	ND	99.3	75-125			
Copper	0.491	0.0030	mg/L	0.500	ND	97.8	75-125			
Iron	2.28	0.200	mg/L	2.00	0.300	99.0	75-125			
Magnesium	76.2	0.500	mg/L	10.0	68.1	80.9	75-125			
Manganese	0.747	0.0100	mg/L	0.500	0.210	107	75-125			
Nickel	0.528	0.0100	mg/L	0.500	ND	106	75-125			
Potassium	15.0	0.500	mg/L	10.0	3.65	114	75-125			
Silver	0.547	0.0050	mg/L	0.500	ND	109	75-125			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0272 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJJ0272-MS1)	**Source: 21I0413-03**		Prepared: 11-Oct-2021	Analyzed: 12-Oct-2021 18:44						
Sodium	33.8	0.500	mg/L	10.0	21.3	125	75-125			
Vanadium	0.514	0.0030	mg/L	0.500	ND	103	75-125			
Zinc	0.496	0.0200	mg/L	0.500	ND	99.1	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike (BJJ0272-MS2)	**Source: 21I0413-03**		Prepared: 11-Oct-2021	Analyzed: 15-Oct-2021 14:52						
Barium	2.48	0.500	mg/L	2.00	ND	105	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJJ0272-MSD1)	**Source: 21I0413-03**		Prepared: 11-Oct-2021	Analyzed: 12-Oct-2021 18:49						
Aluminum	2.25	1.00	mg/L	2.00	ND	112	75-125	0.07	20	
Beryllium	0.534	0.0100	mg/L	0.500	ND	107	75-125	0.90	20	
Calcium	119	0.500	mg/L	10.0	110	92.1	75-125	1.62	20	
Chromium	0.548	0.0100	mg/L	0.500	ND	110	75-125	0.49	20	
Cobalt	0.506	0.0100	mg/L	0.500	ND	101	75-125	1.87	20	
Copper	0.495	0.0030	mg/L	0.500	ND	98.6	75-125	0.78	20	
Iron	2.28	0.200	mg/L	2.00	0.300	98.7	75-125	0.23	20	
Magnesium	75.3	0.500	mg/L	10.0	68.1	71.7	75-125	1.22	20	HC
Manganese	0.741	0.0100	mg/L	0.500	0.210	106	75-125	0.75	20	
Nickel	0.530	0.0100	mg/L	0.500	ND	106	75-125	0.36	20	
Potassium	15.0	0.500	mg/L	10.0	3.65	113	75-125	0.15	20	
Silver	0.551	0.0050	mg/L	0.500	ND	110	75-125	0.75	20	
Sodium	33.4	0.500	mg/L	10.0	21.3	121	75-125	1.16	20	
Vanadium	0.519	0.0030	mg/L	0.500	ND	104	75-125	1.04	20	
Zinc	0.495	0.0200	mg/L	0.500	ND	98.9	75-125	0.22	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJJ0272-MSD2)	**Source: 21I0413-03**		Prepared: 11-Oct-2021	Analyzed: 15-Oct-2021 14:57						
Barium	2.50	0.500	mg/L	2.00	ND	106	75-125	0.51	20	
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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0401 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0401-BLK1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:21							
Antimony	121	ND	0.00300	mg/L							U
Antimony	123	ND	0.00300	mg/L							U
Lead	208	ND	0.0100	mg/L							U
Thallium	205	ND	0.00200	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U
LCS (BJJ0401-BS1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:26							
Antimony	121	0.0270	0.00300	mg/L	0.0250		108	80-120			
Antimony	123	0.0258	0.00300	mg/L	0.0250		103	80-120			
Lead	208	0.0271	0.0100	mg/L	0.0250		109	80-120			
Thallium	205	0.0272	0.00200	mg/L	0.0250		109	80-120			
Arsenic	75a	0.0243	0.00300	mg/L	0.0250		97.1	80-120			
Selenium	78	0.0778	0.0250	mg/L	0.0800		97.2	80-120			
Duplicate (BJJ0401-DUP1)			**Source: 21I0413-03**	Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 20:03							
Lead	208	ND	0.0100	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Selenium	78	ND	0.0250	mg/L		ND					U
Duplicate (BJJ0401-DUP2)			**Source: 21I0413-03**	Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 22:10							
Antimony	121	ND	0.00300	mg/L		ND					U
Matrix Spike (BJJ0401-MS1)			**Source: 21I0413-03**	Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 20:08							
Lead	208	0.0251	0.0100	mg/L	0.0250	ND	100	75-125			
Thallium	205	0.0259	0.00200	mg/L	0.0250	ND	104	75-125			
Arsenic	75a	0.0246	0.00300	mg/L	0.0250	ND	98.4	75-125			
Selenium	78	0.0747	0.0250	mg/L	0.0800	ND	93.4	75-125			

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

Matrix Spike (BJJ0401-MS2)			**Source: 21I0413-03**	Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 22:15							
Antimony	121	0.0253	0.00300	mg/L	0.0250	ND	101	75-125			

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

Matrix Spike Dup (BJJ0401-MSD1)			**Source: 21I0413-03**	Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 20:14							

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0401 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0401-MSD1)		**Source: 21I0413-03**			Prepared: 14-Oct-2021		Analyzed: 18-Oct-2021 20:14				
Lead	208	0.0242	0.0100	mg/L	0.0250	ND	96.8	75-125	3.61	20	
Thallium	205	0.0251	0.00200	mg/L	0.0250	ND	100	75-125	3.27	20	
Arsenic	75a	0.0246	0.00300	mg/L	0.0250	ND	98.6	75-125	0.22	20	
Selenium	78	0.0756	0.0250	mg/L	0.0800	ND	94.5	75-125	1.18	20	

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

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0401-MSD2)		**Source: 21I0413-03**			Prepared: 14-Oct-2021		Analyzed: 19-Oct-2021 22:21				
Antimony	121	0.0248	0.00300	mg/L	0.0250	ND	99.4	75-125	1.64	20	

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0462 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0462-BLK2)			Prepared: 15-Oct-2021 Analyzed: 18-Oct-2021 18:35							
Cadmium	ND	0.0020	mg/L							U
LCS (BJJ0462-BS1)			Prepared: 15-Oct-2021 Analyzed: 18-Oct-2021 17:15							
Cadmium	0.552	0.0020	mg/L	0.500		110	80-120			
Duplicate (BJJ0462-DUP1)		**Source: 21I0413-03RE1**	Prepared: 15-Oct-2021 Analyzed: 18-Oct-2021 17:51							
Cadmium	ND	0.0020	mg/L		ND					U
Matrix Spike (BJJ0462-MS1)		**Source: 21I0413-03RE1**	Prepared: 15-Oct-2021 Analyzed: 18-Oct-2021 18:00							
Cadmium	0.561	0.0020	mg/L	0.500	ND	112	75-125			

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

Matrix Spike Dup (BJJ0462-MSD1)		**Source: 21I0413-03RE1**	Prepared: 15-Oct-2021 Analyzed: 18-Oct-2021 18:05							
Cadmium	0.547	0.0020	mg/L	0.500	ND	109	75-125	2.51	20	

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 6010D in Water	
Silver	WADOE,NELAP,DoD-ELAP
Aluminum	WADOE,NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP,ADEC
Beryllium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Cadmium	WADOE,NELAP,DoD-ELAP,ADEC
Cobalt	WADOE,NELAP,DoD-ELAP
Chromium	WADOE,NELAP,DoD-ELAP,ADEC
Copper	WADOE,NELAP,DoD-ELAP
Iron	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Magnesium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
EPA 7470A in Water	
Mercury	WADOE,NELAP,DoD-ELAP
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

Golder Associates	Project: Landsburg	
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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
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

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

Project: Landsburg
Project Number: Landsburg
Project Manager: Gary Zimmerman

Reported:
27-Oct-2021 12:20

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
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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	27-Oct-2021 12:20

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
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	27-Oct-2021 12:20

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
H	Hold time violation - Hold time was exceeded.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

28 October 2021

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

RE: Landsburg

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
21J0033	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: 21J0033	Turn-around Requested:	Page:	of
ARI Client Company: Golder	Phone:	Date:	Ice Present?
Client Contact: Gary Zimmerman / Joseph Li		No. of Coolers:	Cooler Temps: See CRF
Client Project Name: Landsburge			
Client Project #: 923100007.2021	Samplers:		

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

Sample ID	Date	Time	Matrix	No. Containers	VOCs (Client List)	Total Metals (Client List)	Dissolved Metals (Client List)	TPH-HCID (Hold for Follow-up)					Notes/Comments
LMW-7-0921	9/30/2021	0945	W	11	X	X	X	X					Analyze in accordance w/ MSA between Golder & ARI
LMW-9-0921		1130	W	11	X	X	X	X					
LMW-3-0921		1240	W	11	X	X	X	X					
LMW-5-0921		1310	W	11	X	X	X	X					
LMW-8-0921		1455	W	11	X	X	X	X					

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
-Ecology EIM EDD -Client Specific RLs/ Analyte List -Hold TPH for follow-ups	(Signature) Turner Dogget	(Signature) Dlomit	(Signature)	(Signature)
	Printed Name: Turner Dogget	Printed Name: Dimitri Lomnadze	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 9/30/2021 1706	Date & Time: 09/30/21 1700	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-7-0921	21J0033-01	Water	30-Sep-2021 09:45	30-Sep-2021 17:00
LMW-9-0921	21J0033-03	Water	30-Sep-2021 11:30	30-Sep-2021 17:00
LMW-3-0921	21J0033-05	Water	30-Sep-2021 12:40	30-Sep-2021 17:00
LMW-5-0921	21J0033-07	Water	30-Sep-2021 13:10	30-Sep-2021 17:00
LMW-8-0921	21J0033-09	Water	30-Sep-2021 14:55	30-Sep-2021 17:00

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

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 with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL. All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) containes Hexachloro-1,3-Butadiene. Samples that contain analyte have been flagged with a "B" qualifer.

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

Total and Dissolved Metals - EPA Method 200.8, 6010D and 7470A

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

Initial and continuing calibrations were within method requirements.

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

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

The matrix spike (MS) percent recoveries and the duplicate (DUP) 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.

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 10/1/2021 05:18:20PM

WORK ORDER

21J0033

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates
Project Manager: Kelly Bottem
Project: Landsburg
Project Number: Landsburg

Preservation Confirmation

Container ID	Container Type	pH
21J0033-01 A	HDPE NM, 500 mL, 1:1 HNO3	<2 Pass (P)
21J0033-01 B	Glass NM, Amber, 500 mL	
21J0033-01 C	Glass NM, Amber, 500 mL	
21J0033-01 D	Glass NM, Amber, 500 mL	
21J0033-01 E	Glass NM, Amber, 500 mL	
21J0033-01 F	VOA Vial, Clear, 40 mL, HCL	
21J0033-01 G	VOA Vial, Clear, 40 mL, HCL	
21J0033-01 H	VOA Vial, Clear, 40 mL, HCL	
21J0033-01 I	VOA Vial, Clear, 40 mL, HCL	
21J0033-01 J	VOA Vial, Clear, 40 mL, HCL	
21J0033-02 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 P
21J0033-03 A	HDPE NM, 500 mL, 1:1 HNO3	<2 P
21J0033-03 B	Glass NM, Amber, 500 mL	
21J0033-03 C	Glass NM, Amber, 500 mL	
21J0033-03 D	Glass NM, Amber, 500 mL	
21J0033-03 E	Glass NM, Amber, 500 mL	
21J0033-03 F	VOA Vial, Clear, 40 mL, HCL	
21J0033-03 G	VOA Vial, Clear, 40 mL, HCL	
21J0033-03 H	VOA Vial, Clear, 40 mL, HCL	
21J0033-03 I	VOA Vial, Clear, 40 mL, HCL	
21J0033-03 J	VOA Vial, Clear, 40 mL, HCL	
21J0033-04 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 P
21J0033-05 A	HDPE NM, 500 mL, 1:1 HNO3	<2 P
21J0033-05 B	Glass NM, Amber, 500 mL	
21J0033-05 C	Glass NM, Amber, 500 mL	
21J0033-05 D	Glass NM, Amber, 500 mL	
21J0033-05 E	Glass NM, Amber, 500 mL	
21J0033-05 F	VOA Vial, Clear, 40 mL, HCL	
21J0033-05 G	VOA Vial, Clear, 40 mL, HCL	
21J0033-05 H	VOA Vial, Clear, 40 mL, HCL	
21J0033-05 I	VOA Vial, Clear, 40 mL, HCL	
21J0033-05 J	VOA Vial, Clear, 40 mL, HCL	
21J0033-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2 P
21J0033-07 A	HDPE NM, 500 mL, 1:1 HNO3	<2 P

Reviewed By

Date

WORK ORDER

21J0033

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** Landsburg

21J0033-07 B	Glass NM, Amber, 500 mL	
21J0033-07 C	Glass NM, Amber, 500 mL	
21J0033-07 D	Glass NM, Amber, 500 mL	
21J0033-07 E	Glass NM, Amber, 500 mL	
21J0033-07 F	VOA Vial, Clear, 40 mL, HCL	
21J0033-07 G	VOA Vial, Clear, 40 mL, HCL	
21J0033-07 H	VOA Vial, Clear, 40 mL, HCL	
21J0033-07 I	VOA Vial, Clear, 40 mL, HCL	
21J0033-07 J	VOA Vial, Clear, 40 mL, HCL	
21J0033-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2 P
21J0033-09 A	HDPE NM, 500 mL, 1:1 HNO3	L2 P
21J0033-09 B	Glass NM, Amber, 500 mL	
21J0033-09 C	Glass NM, Amber, 500 mL	
21J0033-09 D	Glass NM, Amber, 500 mL	
21J0033-09 E	Glass NM, Amber, 500 mL	
21J0033-09 F	VOA Vial, Clear, 40 mL, HCL	
21J0033-09 G	VOA Vial, Clear, 40 mL, HCL	
21J0033-09 H	VOA Vial, Clear, 40 mL, HCL	
21J0033-09 I	VOA Vial, Clear, 40 mL, HCL	
21J0033-09 J	VOA Vial, Clear, 40 mL, HCL	
21J0033-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2 P

DC
Preservation Confirmed By

10/01/21
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Calder

Project Name: Landsburg

COC No(s): ~~NA~~

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

Assigned ARI Job No: 21J0033

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 1700 2.3 5.6 5.5 2.0 ___ ___

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

Temp Gun ID#: D002 565

Cooler Accepted by: DL Date: 04/30/21 Time: 1700

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: DL Date: DL 04/10/21 Time: 1654 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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 09:45

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0033-01 H

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 09:45

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:18

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	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 09:45

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:18

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 %*	*107*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*90.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/30/2021 09:45
Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 00:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0033-01 B 01
Preparation Batch: BJJ0047 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*123*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*118*	*%*	

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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/30/2021 09:45
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 23:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-01 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/30/2021 09:45
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 07:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-01 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	28-Oct-2021 14:32

LMW-7-0921

21J0033-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/30/2021 09:45
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 14:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0033-01 A 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	0.534	mg/L	
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	55.4	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	1.11	mg/L	
Magnesium	7439-95-4	1	0.500	26.0	mg/L	
Manganese	7439-96-5	1	0.0100	0.163	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.22	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	44.6	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
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LMW-7-0921

21J0033-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/30/2021 09:45

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 11:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0033-01 A

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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:**
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LMW-9-0921

21J0033-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 11:30
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:38

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0033-03 H
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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:**
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21J0033-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 11:30

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:38

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	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 11:30

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:38

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 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*84.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/30/2021 11:30

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 00:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0033-03 B 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*107*	*%*	

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	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/30/2021 11:30
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/20/2021 23:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-03 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/30/2021 11:30
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 07:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-03 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/30/2021 11:30
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 14:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0033-03 A 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	79.0	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	1.38	mg/L	
Magnesium	7439-95-4	1	0.500	42.9	mg/L	
Manganese	7439-96-5	1	0.0100	0.187	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.54	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	15.0	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	28-Oct-2021 14:32

LMW-9-0921

21J0033-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/30/2021 11:30
Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 11:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0033-03 A
Preparation Batch: BJJ0197 — Sample Size: 20 mL
Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 12:40

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0033-05 H

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 12:40

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:59

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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 12:40

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 17:59

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 %*	*110*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*89.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/30/2021 12:40
Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 01:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0033-05 B 01
Preparation Batch: BJJ0047 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*107*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*104*	*%*	

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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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/30/2021 12:40
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/20/2021 23:19

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-05 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/30/2021 12:40
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 07:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-05 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/30/2021 12:40
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 14:51

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0033-05 A 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	35.8	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	14.7	mg/L	
Manganese	7439-96-5	1	0.0100	0.0250	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.61	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	10.0	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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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	28-Oct-2021 14:32

LMW-3-0921

21J0033-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/30/2021 12:40
Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0033-05 A
Preparation Batch: BJJ0197 — Sample Size: 20 mL
Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 18:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0033-07 I

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	28-Oct-2021 14:32

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21J0033-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 18:20

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

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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 18:20

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 %*	*110*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*87.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/30/2021 13:10
Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 01:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0033-07 B 01
Preparation Batch: BJJ0047 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*107*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*106*	*%*	

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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/30/2021 13:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/20/2021 23:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-07 A 02

Preparation Batch: BJJ0489 — Sample Size: 25 mL

Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/30/2021 13:10
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 07:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-07 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/30/2021 13:10
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 14:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0033-07 A 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	80.6	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.294	mg/L	
Magnesium	7439-95-4	1	0.500	44.3	mg/L	
Manganese	7439-96-5	1	0.0100	0.226	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.60	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	14.8	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	28-Oct-2021 14:32

LMW-5-0921

21J0033-07 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/30/2021 13:10
Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0033-07 A
Preparation Batch: BJJ0197 — Sample Size: 20 mL
Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 14:55
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 18:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0033-09 I
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/30/2021 14:55

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 18:41

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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D
Instrument: NT2 Analyst: LH

Sampled: 09/30/2021 14:55
Analyzed: 10/06/2021 18:41

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 %*	*111*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*88.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/30/2021 14:55
Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 01:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0033-09 B 01
Preparation Batch: BJJ0047 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*114*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*110*	*%*	

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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/30/2021 14:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/21/2021 19:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-09 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/30/2021 14:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/19/2021 07:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0033-09 A 02
Preparation Batch: BJJ0489 — Sample Size: 25 mL
Prepared: 10/18/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/30/2021 14:55
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 14:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0033-09 A 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	70.5	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	10.2	mg/L	
Magnesium	7439-95-4	1	0.500	38.5	mg/L	
Manganese	7439-96-5	1	0.0100	0.466	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.13	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	13.1	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	28-Oct-2021 14:32

LMW-8-0921

21J0033-09 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/30/2021 14:55
Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0033-09 A
Preparation Batch: BJJ0197 — Sample Size: 20 mL
Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27							
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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27							
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	0.60	0.50	ug/L							
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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.10		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.64		ug/L	*5.00*		*92.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.24		ug/L	*5.00*		*105*	*80-120*			
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
Chloromethane	9.99	0.50	ug/L	10.0		99.9	60-138			
Vinyl Chloride	9.79	0.10	ug/L	10.0		97.9	66-133			
Bromomethane	10.3	1.00	ug/L	10.0		103	72-131			
Chloroethane	9.70	0.20	ug/L	10.0		97.0	60-155			
Trichlorofluoromethane	12.1	0.20	ug/L	10.0		121	62-141			
Acrolein	49.1	5.00	ug/L	50.0		98.2	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.28	0.20	ug/L	10.0		92.8	76-129			
Acetone	47.4	5.00	ug/L	50.0		94.9	58-142			
1,1-Dichloroethene	9.36	0.20	ug/L	10.0		93.6	69-135			
Iodomethane	9.90	1.00	ug/L	10.0		99.0	56-147			
Methylene Chloride	9.49	1.00	ug/L	10.0		94.9	65-135			
Acrylonitrile	10.9	1.00	ug/L	10.0		109	64-134			
Carbon Disulfide	9.46	0.20	ug/L	10.0		94.6	78-125			
trans-1,2-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	78-128			
Vinyl Acetate	8.49	0.20	ug/L	10.0		84.9	55-138			Q
1,1-Dichloroethane	9.78	0.20	ug/L	10.0		97.8	76-124			
2-Butanone	50.8	5.00	ug/L	50.0		102	61-140			
2,2-Dichloropropane	9.42	0.20	ug/L	10.0		94.2	66-147			
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	80-121			
Chloroform	9.84	0.20	ug/L	10.0		98.4	80-122			
Bromochloromethane	9.86	0.20	ug/L	10.0		98.6	80-121			
1,1,1-Trichloroethane	10.2	0.20	ug/L	10.0		102	79-123			
1,1-Dichloropropene	10.7	0.10	ug/L	10.0		107	80-127			
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137			
1,2-Dichloroethane	9.70	0.20	ug/L	10.0		97.0	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	9.50	0.20	ug/L	10.0		95.0	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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,2-Dichloropropane	9.60	0.20	ug/L	10.0		96.0	80-120			
Bromodichloromethane	9.94	0.20	ug/L	10.0		99.4	80-121			
Dibromomethane	9.90	0.20	ug/L	10.0		99.0	80-120			
2-Chloroethyl vinyl ether	8.14	1.00	ug/L	10.0		81.4	64-120			Q
4-Methyl-2-Pentanone	52.8	2.50	ug/L	50.0		106	67-133			
cis-1,3-Dichloropropene	11.1	0.20	ug/L	10.0		111	80-124			
Toluene	9.68	0.20	ug/L	10.0		96.8	80-120			
trans-1,3-Dichloropropene	8.94	0.20	ug/L	10.0		89.4	71-127			
2-Hexanone	55.4	5.00	ug/L	50.0		111	69-133			
1,1,2-Trichloroethane	9.80	0.20	ug/L	10.0		98.0	80-121			
1,3-Dichloropropane	9.99	0.10	ug/L	10.0		99.9	80-120			
Tetrachloroethene	9.31	0.20	ug/L	10.0		93.1	80-120			
Dibromochloromethane	10.6	0.20	ug/L	10.0		106	65-135			
1,2-Dibromoethane	10.9	0.10	ug/L	10.0		109	80-121			
Chlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	21.6	0.40	ug/L	20.0		108	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Xylenes, total	32.6	0.60	ug/L	30.0		109	76-127			
Styrene	10.8	0.20	ug/L	10.0		108	80-124			
Bromoform	9.28	0.20	ug/L	10.0		92.8	51-134			
1,1,2,2-Tetrachloroethane	9.63	0.20	ug/L	10.0		96.3	77-123			
1,2,3-Trichloropropane	9.89	0.25	ug/L	10.0		98.9	76-125			
trans-1,4-Dichloro 2-Butene	8.27	1.00	ug/L	10.0		82.7	55-129			
n-Propylbenzene	11.1	0.20	ug/L	10.0		111	78-130			
Bromobenzene	9.96	0.20	ug/L	10.0		99.6	80-120			
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128			
2-Chlorotoluene	10.4	0.10	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121			
t-Butylbenzene	11.4	0.20	ug/L	10.0		114	78-125			
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129			
1,2,4-Trimethylbenzene	11.7	0.20	ug/L	10.0		117	80-127			
s-Butylbenzene	11.0	0.20	ug/L	10.0		110	78-129			
4-Isopropyl Toluene	11.6	0.20	ug/L	10.0		116	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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129			
1,2-Dichlorobenzene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,2-Dibromo-3-chloropropane	8.99	0.50	ug/L	10.0		89.9	62-123			
1,2,4-Trichlorobenzene	8.93	0.50	ug/L	10.0		89.3	64-124			Q
Hexachloro-1,3-Butadiene	11.0	0.50	ug/L	10.0		110	58-123			B
Naphthalene	8.51	0.50	ug/L	10.0		85.1	50-134			Q
1,2,3-Trichlorobenzene	9.13	0.50	ug/L	10.0		91.3	49-133			
Dichlorodifluoromethane	11.1	0.20	ug/L	10.0		111	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.82		ug/L	*5.00*		*96.4*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.99		ug/L	*5.00*		*99.9*	*80-120*			
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloromethane	9.98	0.50	ug/L	10.0		99.8	60-138	0.01	30	
Vinyl Chloride	9.35	0.10	ug/L	10.0		93.5	66-133	4.58	30	
Bromomethane	9.85	1.00	ug/L	10.0		98.5	72-131	4.82	30	
Chloroethane	8.92	0.20	ug/L	10.0		89.2	60-155	8.46	30	
Trichlorofluoromethane	11.3	0.20	ug/L	10.0		113	62-141	6.86	30	
Acrolein	46.6	5.00	ug/L	50.0		93.2	52-190	5.18	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.99	0.20	ug/L	10.0		89.9	76-129	3.19	30	
Acetone	45.0	5.00	ug/L	50.0		89.9	58-142	5.35	30	
1,1-Dichloroethene	9.05	0.20	ug/L	10.0		90.5	69-135	3.29	30	
Iodomethane	9.50	1.00	ug/L	10.0		95.0	56-147	4.05	30	
Methylene Chloride	9.19	1.00	ug/L	10.0		91.9	65-135	3.14	30	
Acrylonitrile	9.99	1.00	ug/L	10.0		99.9	64-134	8.50	30	
Carbon Disulfide	9.03	0.20	ug/L	10.0		90.3	78-125	4.73	30	
trans-1,2-Dichloroethene	9.04	0.20	ug/L	10.0		90.4	78-128	4.09	30	
Vinyl Acetate	8.23	0.20	ug/L	10.0		82.3	55-138	3.19	30	Q
1,1-Dichloroethane	9.38	0.20	ug/L	10.0		93.8	76-124	4.17	30	
2-Butanone	47.7	5.00	ug/L	50.0		95.3	61-140	6.32	30	
2,2-Dichloropropane	8.88	0.20	ug/L	10.0		88.8	66-147	5.89	30	
cis-1,2-Dichloroethene	9.79	0.20	ug/L	10.0		97.9	80-121	2.70	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloroform	9.34	0.20	ug/L	10.0		93.4	80-122	5.15	30	
Bromochloromethane	9.54	0.20	ug/L	10.0		95.4	80-121	3.25	30	
1,1,1-Trichloroethane	9.63	0.20	ug/L	10.0		96.3	79-123	5.49	30	
1,1-Dichloropropene	10.2	0.10	ug/L	10.0		102	80-127	4.79	30	
Carbon tetrachloride	9.63	0.20	ug/L	10.0		96.3	53-137	4.66	30	
1,2-Dichloroethane	9.17	0.20	ug/L	10.0		91.7	75-123	5.64	30	
Benzene	9.81	0.20	ug/L	10.0		98.1	80-120	3.48	30	
Trichloroethene	9.37	0.20	ug/L	10.0		93.7	80-120	1.40	30	
1,2-Dichloropropane	9.49	0.20	ug/L	10.0		94.9	80-120	1.17	30	
Bromodichloromethane	9.62	0.20	ug/L	10.0		96.2	80-121	3.33	30	
Dibromomethane	9.77	0.20	ug/L	10.0		97.7	80-120	1.36	30	
2-Chloroethyl vinyl ether	7.91	1.00	ug/L	10.0		79.1	64-120	2.96	30	Q
4-Methyl-2-Pentanone	51.9	2.50	ug/L	50.0		104	67-133	1.89	30	
cis-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-124	3.78	30	
Toluene	9.41	0.20	ug/L	10.0		94.1	80-120	2.85	30	
trans-1,3-Dichloropropene	8.58	0.20	ug/L	10.0		85.8	71-127	4.14	30	
2-Hexanone	54.0	5.00	ug/L	50.0		108	69-133	2.69	30	
1,1,2-Trichloroethane	9.35	0.20	ug/L	10.0		93.5	80-121	4.72	30	
1,3-Dichloropropane	9.68	0.10	ug/L	10.0		96.8	80-120	3.14	30	
Tetrachloroethene	8.91	0.20	ug/L	10.0		89.1	80-120	4.42	30	
Dibromochloromethane	10.3	0.20	ug/L	10.0		103	65-135	3.43	30	
1,2-Dibromoethane	10.5	0.10	ug/L	10.0		105	80-121	3.48	30	
Chlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	5.69	30	
Ethylbenzene	10.0	0.20	ug/L	10.0		100	80-120	4.00	30	
1,1,1,2-Tetrachloroethane	9.87	0.20	ug/L	10.0		98.7	80-120	4.01	30	
m,p-Xylene	20.9	0.40	ug/L	20.0		104	80-121	3.36	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	4.30	30	
Xylenes, total	31.4	0.60	ug/L	30.0		105	76-127	3.68	30	
Styrene	10.4	0.20	ug/L	10.0		104	80-124	3.27	30	
Bromoform	8.69	0.20	ug/L	10.0		86.9	51-134	6.57	30	
1,1,2,2-Tetrachloroethane	9.34	0.20	ug/L	10.0		93.4	77-123	3.04	30	
1,2,3-Trichloropropane	9.60	0.25	ug/L	10.0		96.0	76-125	2.96	30	
trans-1,4-Dichloro 2-Butene	8.40	1.00	ug/L	10.0		84.0	55-129	1.58	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	6.09	30	
Bromobenzene	9.54	0.20	ug/L	10.0		95.4	80-120	4.29	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Isopropyl Benzene	11.0	0.20	ug/L	10.0		110	80-128	4.96	30	
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122	3.59	30	
4-Chlorotoluene	9.89	0.20	ug/L	10.0		98.9	80-121	5.11	30	
t-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-125	5.57	30	
1,3,5-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-129	5.44	30	
1,2,4-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-127	5.30	30	
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129	4.54	30	
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0		110	79-130	5.85	30	
1,3-Dichlorobenzene	9.76	0.20	ug/L	10.0		97.6	80-120	3.34	30	
1,4-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120	3.45	30	
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129	4.08	30	
1,2-Dichlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	1.89	30	
1,2-Dibromo-3-chloropropane	8.80	0.50	ug/L	10.0		88.0	62-123	2.13	30	
1,2,4-Trichlorobenzene	8.30	0.50	ug/L	10.0		83.0	64-124	7.22	30	Q
Hexachloro-1,3-Butadiene	9.90	0.50	ug/L	10.0		99.0	58-123	10.10	30	B
Naphthalene	8.23	0.50	ug/L	10.0		82.3	50-134	3.35	30	Q
1,2,3-Trichlorobenzene	8.54	0.50	ug/L	10.0		85.4	49-133	6.63	30	
Dichlorodifluoromethane	11.2	0.20	ug/L	10.0		112	48-147	0.86	30	
Surrogate: 1,2-Dichloroethane-d4	4.91		ug/L	*5.00*		*98.3*	*80-129*			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	*5.00*		*99.5*	*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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BJJ0047 - EPA 3510C SepF

Instrument: FID4 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0047-BLK1)				Prepared: 05-Oct-2021 Analyzed: 06-Oct-2021 23:37						
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	0.246		mg/L	*0.225*		*109*	*50-150*			
Surrogate: n-Triacontane	0.246		mg/L	*0.225*		*109*	*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	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0197 - TWM EPA 7470A

Instrument: HYDRA Analyst: ml

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0197-BLK1)			Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:40							
Mercury	ND	0.00100	mg/L							U
LCS (BJJ0197-BS1)			Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:43							
Mercury	0.00167	0.00100	mg/L	0.00200		83.5	80-120			
Duplicate (BJJ0197-DUP1)	**Source: 21J0033-01**		Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:47							
Mercury	ND	0.00100	mg/L		ND					U
Matrix Spike (BJJ0197-MS1)	**Source: 21J0033-01**		Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:54							
Mercury	ND	0.00100	mg/L	0.00100	ND	81.8	75-125			U
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJJ0197-MSD1)	**Source: 21J0033-01**		Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:57							
Mercury	ND	0.00100	mg/L	0.00100	ND	80.7	75-125			U
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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0391-BLK1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:38						
Barium	ND	0.500	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Chromium	ND	0.0100	mg/L							U
Cobalt	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							U
Manganese	ND	0.0100	mg/L							U
Potassium	ND	0.500	mg/L							U
Silver	ND	0.0050	mg/L							U
Sodium	ND	0.500	mg/L							U
Sodium	ND	50.0	mg/L							U
Vanadium	ND	0.0030	mg/L							U
Blank (BJJ0391-BLK2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:25						
Aluminum	ND	1.00	mg/L							U
Calcium	ND	0.500	mg/L							U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Nickel	ND	0.0100	mg/L							U
Zinc	ND	0.0200	mg/L							U
LCS (BJJ0391-BS1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:41						
Barium	2.09	0.500	mg/L	2.00		105	80-120			
Beryllium	0.536	0.0100	mg/L	0.500		107	80-120			
Cadmium	0.561	0.0020	mg/L	0.500		112	80-120			
Chromium	0.522	0.0100	mg/L	0.500		104	80-120			
Cobalt	0.548	0.0100	mg/L	0.500		110	80-120			
Copper	0.472	0.0030	mg/L	0.500		94.3	80-120			
Manganese	0.512	0.0100	mg/L	0.500		102	80-120			
Potassium	10.2	0.500	mg/L	10.0		102	80-120			
Silver	0.513	0.0050	mg/L	0.500		103	80-120			
Sodium	10.5	0.500	mg/L	10.0		105	80-120			
Vanadium	0.500	0.0030	mg/L	0.500		100	80-120			
LCS (BJJ0391-BS2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:28						

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0391-BS2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:28						
Aluminum	2.05	1.00	mg/L	2.00		102	80-120			
Calcium	9.71	0.500	mg/L	10.0		97.1	80-120			
Iron	1.88	0.200	mg/L	2.00		94.0	80-120			
Magnesium	10.6	0.500	mg/L	10.0		106	80-120			
Nickel	0.507	0.0100	mg/L	0.500		101	80-120			
Zinc	0.494	0.0200	mg/L	0.500		98.8	80-120			
Duplicate (BJJ0391-DUP1)		**Source: 21J0033-01**		Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:45						
Barium	0.513	0.500	mg/L		0.534			4.01	20	
Beryllium	ND	0.0100	mg/L		ND					U
Cadmium	ND	0.0020	mg/L		ND					U
Chromium	ND	0.0100	mg/L		ND					U
Cobalt	ND	0.0100	mg/L		ND					U
Copper	ND	0.0030	mg/L		ND					U
Manganese	0.156	0.0100	mg/L		0.163			4.23	20	
Potassium	3.02	0.500	mg/L		3.22			6.38	20	
Silver	ND	0.0050	mg/L		ND					U
Vanadium	ND	0.0030	mg/L		ND					U
Duplicate (BJJ0391-DUP2)		**Source: 21J0033-01**		Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:33						
Aluminum	ND	1.00	mg/L		ND					U
Calcium	52.0	0.500	mg/L		55.4			6.31	20	
Iron	1.05	0.200	mg/L		1.11			5.43	20	
Magnesium	24.3	0.500	mg/L		26.0			6.66	20	
Nickel	ND	0.0100	mg/L		ND					U
Sodium	40.5	0.500	mg/L		44.6			9.73	20	
Zinc	ND	0.0200	mg/L		ND					U
Matrix Spike (BJJ0391-MS1)		**Source: 21J0033-01**		Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:51						
Barium	2.69	0.500	mg/L	2.00	0.534	108	75-125			
Beryllium	0.556	0.0100	mg/L	0.500	ND	111	75-125			
Cadmium	0.572	0.0020	mg/L	0.500	ND	114	75-125			
Chromium	0.549	0.0100	mg/L	0.500	ND	110	75-125			
Cobalt	0.537	0.0100	mg/L	0.500	ND	107	75-125			
Copper	0.482	0.0030	mg/L	0.500	ND	96.3	75-125			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJJ0391-MS1)	**Source: 21J0033-01**			Prepared: 14-Oct-2021	Analyzed: 18-Oct-2021 18:51					
Manganese	0.690	0.0100	mg/L	0.500	0.163	105	75-125			
Potassium	13.8	0.500	mg/L	10.0	3.22	105	75-125			
Silver	0.526	0.0050	mg/L	0.500	ND	105	75-125			
Vanadium	0.518	0.0030	mg/L	0.500	ND	104	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike (BJJ0391-MS2)	**Source: 21J0033-01**			Prepared: 14-Oct-2021	Analyzed: 19-Oct-2021 14:39					
Aluminum	2.12	1.00	mg/L	2.00	ND	106	75-125			
Calcium	62.2	0.500	mg/L	10.0	55.4	68.1	75-125			HC
Iron	3.00	0.200	mg/L	2.00	1.11	94.8	75-125			
Magnesium	34.3	0.500	mg/L	10.0	26.0	83.6	75-125			
Nickel	0.517	0.0100	mg/L	0.500	ND	103	75-125			
Sodium	51.9	0.500	mg/L	10.0	44.6	72.8	75-125			HC, E
Zinc	0.513	0.0200	mg/L	0.500	ND	103	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJJ0391-MSD1)	**Source: 21J0033-01**			Prepared: 14-Oct-2021	Analyzed: 18-Oct-2021 18:56					
Barium	2.68	0.500	mg/L	2.00	0.534	107	75-125	0.44	20	
Beryllium	0.552	0.0100	mg/L	0.500	ND	110	75-125	0.75	20	
Cadmium	0.573	0.0020	mg/L	0.500	ND	115	75-125	0.12	20	
Chromium	0.539	0.0100	mg/L	0.500	ND	108	75-125	1.87	20	
Cobalt	0.535	0.0100	mg/L	0.500	ND	107	75-125	0.46	20	
Copper	0.482	0.0030	mg/L	0.500	ND	96.5	75-125	0.19	20	
Manganese	0.686	0.0100	mg/L	0.500	0.163	105	75-125	0.60	20	
Potassium	13.8	0.500	mg/L	10.0	3.22	106	75-125	0.37	20	
Silver	0.529	0.0050	mg/L	0.500	ND	106	75-125	0.43	20	
Vanadium	0.519	0.0030	mg/L	0.500	ND	104	75-125	0.24	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJJ0391-MSD2)	**Source: 21J0033-01**			Prepared: 14-Oct-2021	Analyzed: 19-Oct-2021 14:43					
Aluminum	2.09	1.00	mg/L	2.00	ND	105	75-125	1.06	20	
Calcium	64.0	0.500	mg/L	10.0	55.4	85.9	75-125	2.81	20	
Iron	3.03	0.200	mg/L	2.00	1.11	96.3	75-125	0.97	20	
Magnesium	35.2	0.500	mg/L	10.0	26.0	92.0	75-125	2.42	20	
Nickel	0.513	0.0100	mg/L	0.500	ND	103	75-125	0.82	20	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0391-MSD2)	**Source: 21J0033-01**		Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:43							
Sodium	52.7	0.500	mg/L	10.0	44.6	81.0	75-125	1.56	20	E
Zinc	0.516	0.0200	mg/L	0.500	ND	103	75-125	0.63	20	

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0489 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0489-BLK1)				Prepared: 18-Oct-2021 Analyzed: 18-Oct-2021 17:18							
Antimony	121	ND	0.00300	mg/L							U
Antimony	123	ND	0.00300	mg/L							U
Lead	208	ND	0.0100	mg/L							U
Thallium	205	ND	0.00200	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U
LCS (BJJ0489-BS1)				Prepared: 18-Oct-2021 Analyzed: 18-Oct-2021 17:22							
Antimony	121	0.0261	0.00300	mg/L	0.0250		105	80-120			
Antimony	123	0.0253	0.00300	mg/L	0.0250		101	80-120			
Lead	208	0.0274	0.0100	mg/L	0.0250		109	80-120			
Thallium	205	0.0279	0.00200	mg/L	0.0250		111	80-120			
Arsenic	75a	0.0238	0.00300	mg/L	0.0250		95.0	80-120			
Selenium	78	0.0773	0.0250	mg/L	0.0800		96.7	80-120			
Duplicate (BJJ0489-DUP1)			**Source: 21J0033-01**	Prepared: 18-Oct-2021 Analyzed: 19-Oct-2021 07:39							
Lead	208	ND	0.0100	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Selenium	78	ND	0.0250	mg/L		ND					U
Duplicate (BJJ0489-DUP3)			**Source: 21J0033-01**	Prepared: 18-Oct-2021 Analyzed: 19-Oct-2021 23:16							
Antimony	121	ND	0.00300	mg/L		ND					U
Matrix Spike (BJJ0489-MS1)			**Source: 21J0033-01**	Prepared: 18-Oct-2021 Analyzed: 19-Oct-2021 07:44							
Lead	208	0.0252	0.0100	mg/L	0.0250	ND	101	75-125			
Thallium	205	0.0254	0.00200	mg/L	0.0250	ND	102	75-125			

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

Matrix Spike (BJJ0489-MS3)			**Source: 21J0033-01**	Prepared: 18-Oct-2021 Analyzed: 19-Oct-2021 23:21							
Antimony	121	0.0260	0.00300	mg/L	0.0250	ND	104	75-125			
Arsenic	75a	0.0260	0.00300	mg/L	0.0250	ND	99.0	75-125			
Selenium	78	0.0776	0.0250	mg/L	0.0800	ND	96.9	75-125			

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

Matrix Spike Dup (BJJ0489-MSD1)			**Source: 21J0033-01**	Prepared: 18-Oct-2021 Analyzed: 19-Oct-2021 07:50							

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0489 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0489-MSD1)		**Source: 21J0033-01**			Prepared: 18-Oct-2021		Analyzed: 19-Oct-2021 07:50				
Lead	208	0.0255	0.0100	mg/L	0.0250	ND	102	75-125	1.42	20	
Thallium	205	0.0256	0.00200	mg/L	0.0250	ND	102	75-125	0.53	20	

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

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0489-MSD3)		**Source: 21J0033-01**			Prepared: 18-Oct-2021		Analyzed: 19-Oct-2021 23:29				
Antimony	121	0.0260	0.00300	mg/L	0.0250	ND	104	75-125	0.08	20	
Arsenic	75a	0.0259	0.00300	mg/L	0.0250	ND	98.6	75-125	0.30	20	
Selenium	78	0.0789	0.0250	mg/L	0.0800	ND	98.6	75-125	1.71	20	

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJJ0333 - WMN (No Prep)

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0333-BLK1)				Prepared: 12-Oct-2021 Analyzed: 15-Oct-2021 18:54						
Cobalt, Dissolved	ND	0.0100	mg/L							U
Iron, Dissolved	ND	0.200	mg/L							U
Manganese, Dissolved	ND	0.0100	mg/L							U
LCS (BJJ0333-BS1)				Prepared: 12-Oct-2021 Analyzed: 15-Oct-2021 18:57						
Cobalt, Dissolved	0.539	0.0101	mg/L	0.500		108	80-120			
Iron, Dissolved	2.07	0.202	mg/L	2.00		103	80-120			
Manganese, Dissolved	0.510	0.0101	mg/L	0.500		102	80-120			

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 6010D in Water	
Silver	WADOE,NELAP,DoD-ELAP
Aluminum	WADOE,NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP,ADEC
Beryllium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Cadmium	WADOE,NELAP,DoD-ELAP,ADEC
Cobalt	WADOE,NELAP,DoD-ELAP
Chromium	WADOE,NELAP,DoD-ELAP,ADEC
Copper	WADOE,NELAP,DoD-ELAP
Iron	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Magnesium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
EPA 7470A in Water	
Mercury	WADOE,NELAP,DoD-ELAP
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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

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
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

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

Project: Landsburg
Project Number: Landsburg
Project Manager: Gary Zimmerman

Reported:
28-Oct-2021 14:32

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

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

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	28-Oct-2021 14:32

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
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	28-Oct-2021 14:32

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, LLC
Analytical Chemists and Consultants

02 November 2021

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

RE: Landsburg

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

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

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

Associated Work Order(s)	Associated SDG ID(s)
21J0035	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: 21J0035	Turn-around Requested: Standard	Page:	of
ARI Client Company: Golder	Phone:	Date:	Ice Present?
Client Contact: Gary Zimmerman / Joseph Xi		No. of Coolers:	Cooler Temps: See CRF
Client Project Name: Landsburg			
Client Project #: 923100007.2021	Samplers: T. Doggett / J. Xi / Chris K.		

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

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOCs (Client List)	Total Metals (Client List)	1,4 Dioxane	TPH-HCID (Data Follow-up)	Dissolved Metals (Client List)				Notes/Comments
LMW-12-0921	9/29/2021	1010	W	12	X	X	X	X					Analyze in accordance w/ MSA between Golder & ARI
LMW-10-0921	9/29/2021	1110	W	12	X	X	X	X					
LMW-11-0921	9/29/2021	1310	W	10	X	X		X					
LMW-FB-0921	9/28/2021	1135	DI	12	X	X	X	X					
LMW-15-0921	9/28/2021	1440	W	11	X	X		X	X				
LMW-14-0921	9/28/2021	1620	W	11	X	X		X	X				
LMW-6-0921	9/28/2021	1730	W	11	X	X		X	X				
Trip Blank-2				3									

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Ecology EIM EDD -Client Specific RL's/Analyte List -Hold TPH-HCID follow-ups	(Signature) Turner Doggett	(Signature) D. Lonnie	(Signature)	(Signature)
	Printed Name: Turner Doggett	Printed Name: Dimitri Lonnacker	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 9/30/2021 1700	Date & Time: 09/30/21 1700	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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-12-0921	21J0035-01	Water	29-Sep-2021 10:10	30-Sep-2021 17:00
LMW-10-0921	21J0035-02	Water	29-Sep-2021 11:10	30-Sep-2021 17:00
LMW-11-0921	21J0035-03	Water	29-Sep-2021 13:10	30-Sep-2021 17:00
LMW-FB-0921	21J0035-04	Water	28-Sep-2021 11:35	30-Sep-2021 17:00
LMW-15-0921	21J0035-05	Water	28-Sep-2021 14:40	30-Sep-2021 17:00
LMW-14-0921	21J0035-07	Water	28-Sep-2021 16:20	30-Sep-2021 17:00
LMW-6-0921	21J0035-09	Water	28-Sep-2021 17:30	30-Sep-2021 17:00
Trip Blank-2	21J0035-11	Water	28-Sep-2021 11:35	30-Sep-2021 17:00

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

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 with the exception of all associated "Q" flagged analytes which are out of control low in the CCAL> All associated samples that contain analyte have been flagged with a "Q" qualifer.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) contained hexachloro-1,3-Butadiene. Associated samples that contain analyte have been flagged with a "B" qualifer.

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

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

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

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

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

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.

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Total Metals - EPA Method 6010D, 200.8 and 7470A

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

Initial and continuing calibrations were within method requirements.

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

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

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

WORK ORDER

21J0035

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** Landsburg

Preservation Confirmation

Container ID	Container Type	pH	
21J0035-01 A	Glass NM, Amber, 500 mL		
21J0035-01 B	Glass NM, Amber, 500 mL		
21J0035-01 C	Glass NM, Amber, 500 mL		
21J0035-01 D	Glass NM, Amber, 500 mL		
21J0035-01 E	Glass NM, Amber, 500 mL		
21J0035-01 F	Glass NM, Amber, 500 mL		
21J0035-01 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-01 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-01 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-01 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-01 K	VOA Vial, Clear, 40 mL, HCL		
21J0035-01 L	VOA Vial, Clear, 40 mL, HCL		
21J0035-02 A	Glass NM, Amber, 500 mL		
21J0035-02 B	Glass NM, Amber, 500 mL		
21J0035-02 C	Glass NM, Amber, 500 mL		
21J0035-02 D	Glass NM, Amber, 500 mL		
21J0035-02 E	Glass NM, Amber, 500 mL		
21J0035-02 F	Glass NM, Amber, 500 mL		
21J0035-02 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-02 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-02 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-02 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-02 K	VOA Vial, Clear, 40 mL, HCL		
21J0035-02 L	VOA Vial, Clear, 40 mL, HCL		
21J0035-03 A	Glass NM, Amber, 500 mL		
21J0035-03 B	Glass NM, Amber, 500 mL		
21J0035-03 C	Glass NM, Amber, 500 mL		
21J0035-03 D	Glass NM, Amber, 500 mL		
21J0035-03 E	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-03 F	VOA Vial, Clear, 40 mL, HCL		
21J0035-03 G	VOA Vial, Clear, 40 mL, HCL		
21J0035-03 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-03 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-03 J	VOA Vial, Clear, 40 mL, HCL		

Reviewed By _____ Date _____

WORK ORDER

21J0035

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager:** Kelly Bottem

Project: Landsburg | **Project Number:** Landsburg

21J0035-04 A	Glass NM, Amber, 500 mL		
21J0035-04 B	Glass NM, Amber, 500 mL		
21J0035-04 C	Glass NM, Amber, 500 mL		
21J0035-04 D	Glass NM, Amber, 500 mL		
21J0035-04 E	Glass NM, Amber, 500 mL		
21J0035-04 F	Glass NM, Amber, 500 mL		
21J0035-04 G	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-04 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-04 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-04 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-04 K	VOA Vial, Clear, 40 mL, HCL		
21J0035-04 L	VOA Vial, Clear, 40 mL, HCL		
21J0035-05 A	Glass NM, Amber, 500 mL		
21J0035-05 B	Glass NM, Amber, 500 mL		
21J0035-05 C	Glass NM, Amber, 500 mL		
21J0035-05 D	Glass NM, Amber, 500 mL		
21J0035-05 E	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-05 F	VOA Vial, Clear, 40 mL, HCL		
21J0035-05 G	VOA Vial, Clear, 40 mL, HCL		
21J0035-05 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-05 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-05 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-06 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	Pass
21J0035-07 A	Glass NM, Amber, 500 mL		
21J0035-07 B	Glass NM, Amber, 500 mL		
21J0035-07 C	Glass NM, Amber, 500 mL		
21J0035-07 D	Glass NM, Amber, 500 mL		
21J0035-07 E	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-07 F	VOA Vial, Clear, 40 mL, HCL		
21J0035-07 G	VOA Vial, Clear, 40 mL, HCL		
21J0035-07 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-07 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-07 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-08 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	Pass
21J0035-09 A	Glass NM, Amber, 500 mL		
21J0035-09 B	Glass NM, Amber, 500 mL		

Reviewed By _____ Date _____

WORK ORDER

21J0035

Samples will be discarded 90 days after submission of a final report unless other instructions are received.

Client: Golder Associates | **Project Manager: Kelly Bottem**

Project: Landsburg | **Project Number: Landsburg**

21J0035-09 C	Glass NM, Amber, 500 mL		
21J0035-09 D	Glass NM, Amber, 500 mL		
21J0035-09 E	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21J0035-09 F	VOA Vial, Clear, 40 mL, HCL		
21J0035-09 G	VOA Vial, Clear, 40 mL, HCL		
21J0035-09 H	VOA Vial, Clear, 40 mL, HCL		
21J0035-09 I	VOA Vial, Clear, 40 mL, HCL		
21J0035-09 J	VOA Vial, Clear, 40 mL, HCL		
21J0035-10 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	<2	Pass
21J0035-11 A	VOA Vial, Clear, 40 mL, HCL	Bubble	
21J0035-11 B	VOA Vial, Clear, 40 mL, HCL		
21J0035-11 C	VOA Vial, Clear, 40 mL, HCL		

Preservation Confirmed By

10/02/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
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: 21J0035

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 1700 2.3 5.6 5.5 2.0 ____ ____

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

Temp Gun ID#: DOO2565

Cooler Accepted by: DL Date: 04/30/21 Time: 1700

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	09/20/2021	

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

Samples Logged by: JS Date: 10/03/2021 Time: 0846 Labels checked by: JS

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

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

Additional Notes, Discrepancies, & Resolutions:

vials w/ air bubbles marked on preservation sheet, lab to determine sizes.

By: JS Date: 10/03/2021

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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 10:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 14:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-01 L

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	0.74	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	0.21	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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 10:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 14:52

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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 10:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 14:52

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 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*104*	*%*	

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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/29/2021 10:10

Instrument: NT6 Analyst: JZ — Analyzed: 10/26/2021 12:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21J0035-01 C 01

Preparation Batch: BJJ0125 — Sample Size: 500 mL

Prepared: 10/06/2021 — Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	0.5	ug/L	
Surrogate: 1,4-Dioxane-d8			*33.6-120 %*	*59.0*	*%*	

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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/29/2021 10:10

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 02:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-01 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*112*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*109*	*%*	

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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/29/2021 10:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-01 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/29/2021 10:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-01 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/29/2021 10:10

Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-01 G 01

Preparation Batch: BJJ0391 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	79.0	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	14.1	mg/L	
Magnesium	7439-95-4	1	0.500	51.7	mg/L	
Manganese	7439-96-5	1	0.0100	0.762	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.60	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	9.71	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-12-0921

21J0035-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/29/2021 10:10

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-01 G

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 11:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-02 K

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	0.28	ug/L	
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	02-Nov-2021 10:08

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21J0035-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 11:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:13

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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 11:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:13

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 %*	*94.7*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*100*	*%*	

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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/29/2021 11:10

Instrument: NT6 Analyst: JZ — Analyzed: 10/26/2021 13:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21J0035-02 C 01

Preparation Batch: BJJ0125 — Sample Size: 500 mL

Prepared: 10/06/2021 — 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 %*	*56.1*	*%*	

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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/29/2021 11:10

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 02:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-02 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*104*	*%*	

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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/29/2021 11:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-02 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/29/2021 11:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-02 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/29/2021 11:10

Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-02 G 01

Preparation Batch: BJJ0391 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	6.47	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	3.05	mg/L	
Manganese	7439-96-5	1	0.0100	ND	mg/L	U
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.25	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	77.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-10-0921

21J0035-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/29/2021 11:10

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:11

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-02 G

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-03 H

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	02-Nov-2021 10:08

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21J0035-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:34

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 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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/29/2021 13:10

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:34

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 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*102*	*%*	

Analytical Resources, LLC
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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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/29/2021 13:10

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 02:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-03 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*114*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*114*	*%*	

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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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/29/2021 13:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-03 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

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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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/29/2021 13:10

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-03 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00904	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

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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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/29/2021 13:10
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-03 E 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	58.4	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	0.480	mg/L	
Magnesium	7439-95-4	1	0.500	26.4	mg/L	
Manganese	7439-96-5	1	0.0100	0.186	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.13	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	24.7	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U

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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	02-Nov-2021 10:08

LMW-11-0921

21J0035-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/29/2021 13:10

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:13

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-03 E

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-04 I

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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	1.13	ug/L	
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	02-Nov-2021 10:08

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21J0035-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:56

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 15:56

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 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*96.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*105*	*%*	

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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 09/28/2021 11:35

Instrument: NT6 Analyst: JZ — Analyzed: 10/11/2021 20:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) — Extract ID: 21J0035-04 C 01

Preparation Batch: BJJ0091 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*62.5*	*%*	

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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 11:35

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 03:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-04 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*121*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*118*	*%*	

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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 11:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-04 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 11:35

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 02:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-04 G 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 11:35

Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-04 G 01

Preparation Batch: BJJ0391 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	ND	mg/L	U
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	ND	mg/L	U
Manganese	7439-96-5	1	0.0100	ND	mg/L	U
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	ND	mg/L	U
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	ND	mg/L	U
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-FB-0921

21J0035-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 11:35

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-04 G

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 14:40
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-05 G
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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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LMW-15-0921

21J0035-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 14:40

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:16

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

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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 14:40

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:16

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 %*	*106*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*95.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*106*	*%*	

Analytical Resources, LLC
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Analytical Report

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 14:40

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 03:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-05 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*111*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*109*	*%*	

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	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 14:40

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 03:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-05 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Analytical Resources, LLC
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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	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 14:40

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 03:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-05 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00319	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U

Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

Golder Associates	Project: Landsburg	
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Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 14:40
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-05 E 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	58.7	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	4.01	mg/L	
Magnesium	7439-95-4	1	0.500	25.7	mg/L	
Manganese	7439-96-5	1	0.0100	0.375	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.12	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	13.0	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-15-0921

21J0035-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 14:40

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-05 E

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 16:20
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-07 G
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 16:20

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:36

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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 16:20
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:36

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 %*	*110*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 16:20

Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 03:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-07 A 01

Preparation Batch: BJJ0047 — Sample Size: 500 mL

Prepared: 10/05/2021 — 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 %*	*109*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*106*	*%*	

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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 16:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 03:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-07 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 16:20

Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 03:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-07 E 02

Preparation Batch: BJJ0756 — Sample Size: 25 mL

Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 16:20

Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-07 E 01

Preparation Batch: BJJ0391 — Sample Size: 25 mL

Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	129	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	0.0211	mg/L	
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	9.72	mg/L	
Magnesium	7439-95-4	1	0.500	70.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.535	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.87	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	11.9	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-14-0921

21J0035-07 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 16:20

Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-07 E

Preparation Batch: BJJ0197 — Sample Size: 20 mL

Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 17:30
Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-09 F
Preparation Batch: BJJ0153 — Sample Size: 10 mL
Prepared: 10/06/2021 — 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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 17:30

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:57

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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 17:30

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 16:57

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 %*	*113*	*%*	
Surrogate: Toluene-d8			*80-120 %*	*92.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*92.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID — Sampled: 09/28/2021 17:30
Instrument: FID4 Analyst: TWC — Analyzed: 10/07/2021 04:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF — Extract ID: 21J0035-09 A 01
Preparation Batch: BJJ0047 — Sample Size: 500 mL
Prepared: 10/05/2021 — 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 %*	*111*	*%*	
Surrogate: n-Triacontane			*50-150 %*	*109*	*%*	

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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 — Sampled: 09/28/2021 17:30
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 00:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-09 E 02
Preparation Batch: BJJ0756 — Sample Size: 25 mL
Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U
Lead	7439-92-1	1	0.0100	ND	mg/L	U
Thallium	7440-28-0	1	0.00200	ND	mg/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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED — Sampled: 09/28/2021 17:30
Instrument: ICPMS1 Analyst: MCB — Analyzed: 10/29/2021 00:53

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21J0035-09 E 02
Preparation Batch: BJJ0756 — Sample Size: 25 mL
Prepared: 10/27/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	ND	mg/L	U
Selenium	7782-49-2	1	0.0250	ND	mg/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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D — Sampled: 09/28/2021 17:30
Instrument: ICP2 Analyst: MVP — Analyzed: 10/19/2021 15:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A — Extract ID: 21J0035-09 E 01
Preparation Batch: BJJ0391 — Sample Size: 25 mL
Prepared: 10/14/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aluminum	7429-90-5	1	1.00	ND	mg/L	U
Barium	7440-39-3	1	0.500	ND	mg/L	U
Beryllium	7440-41-7	1	0.0100	ND	mg/L	U
Cadmium	7440-43-9	1	0.0020	ND	mg/L	U
Calcium	7440-70-2	1	0.500	25.7	mg/L	
Chromium	7440-47-3	1	0.0100	ND	mg/L	U
Cobalt	7440-48-4	1	0.0100	ND	mg/L	U
Copper	7440-50-8	1	0.0030	ND	mg/L	U
Iron	7439-89-6	1	0.200	2.02	mg/L	
Magnesium	7439-95-4	1	0.500	13.2	mg/L	
Manganese	7439-96-5	1	0.0100	0.0282	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	0.673	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	7.35	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/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	02-Nov-2021 10:08

LMW-6-0921

21J0035-09 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 09/28/2021 17:30
Instrument: HYDRA Analyst: ml — Analyzed: 10/12/2021 12:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21J0035-09 E
Preparation Batch: BJJ0197 — Sample Size: 20 mL
Prepared: 10/07/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/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	02-Nov-2021 10:08

Trip Blank-2

21J0035-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 12:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21J0035-11 B

Preparation Batch: BJJ0153 — Sample Size: 10 mL

Prepared: 10/06/2021 — 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:**
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Trip Blank-2

21J0035-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 12:47

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	02-Nov-2021 10:08

Trip Blank-2

21J0035-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 09/28/2021 11:35

Instrument: NT2 Analyst: LH — Analyzed: 10/06/2021 12:47

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 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*95.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4			*80-120 %*	*103*	*%*	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27						
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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)			Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27							
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	0.60	0.50	ug/L							
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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0153-BLK1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 12:27						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.10		ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	4.83		ug/L	*5.00*		*96.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.64		ug/L	*5.00*		*92.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.24		ug/L	*5.00*		*105*	*80-120*			
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
Chloromethane	9.99	0.50	ug/L	10.0		99.9	60-138			
Vinyl Chloride	9.79	0.10	ug/L	10.0		97.9	66-133			
Bromomethane	10.3	1.00	ug/L	10.0		103	72-131			
Chloroethane	9.70	0.20	ug/L	10.0		97.0	60-155			
Trichlorofluoromethane	12.1	0.20	ug/L	10.0		121	62-141			
Acrolein	49.1	5.00	ug/L	50.0		98.2	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	9.28	0.20	ug/L	10.0		92.8	76-129			
Acetone	47.4	5.00	ug/L	50.0		94.9	58-142			
1,1-Dichloroethene	9.36	0.20	ug/L	10.0		93.6	69-135			
Iodomethane	9.90	1.00	ug/L	10.0		99.0	56-147			
Methylene Chloride	9.49	1.00	ug/L	10.0		94.9	65-135			
Acrylonitrile	10.9	1.00	ug/L	10.0		109	64-134			
Carbon Disulfide	9.46	0.20	ug/L	10.0		94.6	78-125			
trans-1,2-Dichloroethene	9.42	0.20	ug/L	10.0		94.2	78-128			
Vinyl Acetate	8.49	0.20	ug/L	10.0		84.9	55-138			Q
1,1-Dichloroethane	9.78	0.20	ug/L	10.0		97.8	76-124			
2-Butanone	50.8	5.00	ug/L	50.0		102	61-140			
2,2-Dichloropropane	9.42	0.20	ug/L	10.0		94.2	66-147			
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	80-121			
Chloroform	9.84	0.20	ug/L	10.0		98.4	80-122			
Bromochloromethane	9.86	0.20	ug/L	10.0		98.6	80-121			
1,1,1-Trichloroethane	10.2	0.20	ug/L	10.0		102	79-123			
1,1-Dichloropropene	10.7	0.10	ug/L	10.0		107	80-127			
Carbon tetrachloride	10.1	0.20	ug/L	10.0		101	53-137			
1,2-Dichloroethane	9.70	0.20	ug/L	10.0		97.0	75-123			
Benzene	10.2	0.20	ug/L	10.0		102	80-120			
Trichloroethene	9.50	0.20	ug/L	10.0		95.0	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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,2-Dichloropropane	9.60	0.20	ug/L	10.0		96.0	80-120			
Bromodichloromethane	9.94	0.20	ug/L	10.0		99.4	80-121			
Dibromomethane	9.90	0.20	ug/L	10.0		99.0	80-120			
2-Chloroethyl vinyl ether	8.14	1.00	ug/L	10.0		81.4	64-120			Q
4-Methyl-2-Pentanone	52.8	2.50	ug/L	50.0		106	67-133			
cis-1,3-Dichloropropene	11.1	0.20	ug/L	10.0		111	80-124			
Toluene	9.68	0.20	ug/L	10.0		96.8	80-120			
trans-1,3-Dichloropropene	8.94	0.20	ug/L	10.0		89.4	71-127			
2-Hexanone	55.4	5.00	ug/L	50.0		111	69-133			
1,1,2-Trichloroethane	9.80	0.20	ug/L	10.0		98.0	80-121			
1,3-Dichloropropane	9.99	0.10	ug/L	10.0		99.9	80-120			
Tetrachloroethene	9.31	0.20	ug/L	10.0		93.1	80-120			
Dibromochloromethane	10.6	0.20	ug/L	10.0		106	65-135			
1,2-Dibromoethane	10.9	0.10	ug/L	10.0		109	80-121			
Chlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120			
1,1,1,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	21.6	0.40	ug/L	20.0		108	80-121			
o-Xylene	11.0	0.20	ug/L	10.0		110	80-121			
Xylenes, total	32.6	0.60	ug/L	30.0		109	76-127			
Styrene	10.8	0.20	ug/L	10.0		108	80-124			
Bromoform	9.28	0.20	ug/L	10.0		92.8	51-134			
1,1,2,2-Tetrachloroethane	9.63	0.20	ug/L	10.0		96.3	77-123			
1,2,3-Trichloropropane	9.89	0.25	ug/L	10.0		98.9	76-125			
trans-1,4-Dichloro 2-Butene	8.27	1.00	ug/L	10.0		82.7	55-129			
n-Propylbenzene	11.1	0.20	ug/L	10.0		111	78-130			
Bromobenzene	9.96	0.20	ug/L	10.0		99.6	80-120			
Isopropyl Benzene	11.5	0.20	ug/L	10.0		115	80-128			
2-Chlorotoluene	10.4	0.10	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121			
t-Butylbenzene	11.4	0.20	ug/L	10.0		114	78-125			
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129			
1,2,4-Trimethylbenzene	11.7	0.20	ug/L	10.0		117	80-127			
s-Butylbenzene	11.0	0.20	ug/L	10.0		110	78-129			
4-Isopropyl Toluene	11.6	0.20	ug/L	10.0		116	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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0153-BS1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:25						
1,3-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,4-Dichlorobenzene	9.41	0.20	ug/L	10.0		94.1	80-120			
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129			
1,2-Dichlorobenzene	9.71	0.20	ug/L	10.0		97.1	80-120			
1,2-Dibromo-3-chloropropane	8.99	0.50	ug/L	10.0		89.9	62-123			
1,2,4-Trichlorobenzene	8.93	0.50	ug/L	10.0		89.3	64-124			Q
Hexachloro-1,3-Butadiene	11.0	0.50	ug/L	10.0		110	58-123			B
Naphthalene	8.51	0.50	ug/L	10.0		85.1	50-134			Q
1,2,3-Trichlorobenzene	9.13	0.50	ug/L	10.0		91.3	49-133			
Dichlorodifluoromethane	11.1	0.20	ug/L	10.0		111	48-147			
Surrogate: 1,2-Dichloroethane-d4	4.82		ug/L	*5.00*		*96.4*	*80-129*			
Surrogate: Toluene-d8	5.00		ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.21		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.99		ug/L	*5.00*		*99.9*	*80-120*			
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloromethane	9.98	0.50	ug/L	10.0		99.8	60-138	0.01	30	
Vinyl Chloride	9.35	0.10	ug/L	10.0		93.5	66-133	4.58	30	
Bromomethane	9.85	1.00	ug/L	10.0		98.5	72-131	4.82	30	
Chloroethane	8.92	0.20	ug/L	10.0		89.2	60-155	8.46	30	
Trichlorofluoromethane	11.3	0.20	ug/L	10.0		113	62-141	6.86	30	
Acrolein	46.6	5.00	ug/L	50.0		93.2	52-190	5.18	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	8.99	0.20	ug/L	10.0		89.9	76-129	3.19	30	
Acetone	45.0	5.00	ug/L	50.0		89.9	58-142	5.35	30	
1,1-Dichloroethene	9.05	0.20	ug/L	10.0		90.5	69-135	3.29	30	
Iodomethane	9.50	1.00	ug/L	10.0		95.0	56-147	4.05	30	
Methylene Chloride	9.19	1.00	ug/L	10.0		91.9	65-135	3.14	30	
Acrylonitrile	9.99	1.00	ug/L	10.0		99.9	64-134	8.50	30	
Carbon Disulfide	9.03	0.20	ug/L	10.0		90.3	78-125	4.73	30	
trans-1,2-Dichloroethene	9.04	0.20	ug/L	10.0		90.4	78-128	4.09	30	
Vinyl Acetate	8.23	0.20	ug/L	10.0		82.3	55-138	3.19	30	Q
1,1-Dichloroethane	9.38	0.20	ug/L	10.0		93.8	76-124	4.17	30	
2-Butanone	47.7	5.00	ug/L	50.0		95.3	61-140	6.32	30	
2,2-Dichloropropane	8.88	0.20	ug/L	10.0		88.8	66-147	5.89	30	
cis-1,2-Dichloroethene	9.79	0.20	ug/L	10.0		97.9	80-121	2.70	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Chloroform	9.34	0.20	ug/L	10.0		93.4	80-122	5.15	30	
Bromochloromethane	9.54	0.20	ug/L	10.0		95.4	80-121	3.25	30	
1,1,1-Trichloroethane	9.63	0.20	ug/L	10.0		96.3	79-123	5.49	30	
1,1-Dichloropropene	10.2	0.10	ug/L	10.0		102	80-127	4.79	30	
Carbon tetrachloride	9.63	0.20	ug/L	10.0		96.3	53-137	4.66	30	
1,2-Dichloroethane	9.17	0.20	ug/L	10.0		91.7	75-123	5.64	30	
Benzene	9.81	0.20	ug/L	10.0		98.1	80-120	3.48	30	
Trichloroethene	9.37	0.20	ug/L	10.0		93.7	80-120	1.40	30	
1,2-Dichloropropane	9.49	0.20	ug/L	10.0		94.9	80-120	1.17	30	
Bromodichloromethane	9.62	0.20	ug/L	10.0		96.2	80-121	3.33	30	
Dibromomethane	9.77	0.20	ug/L	10.0		97.7	80-120	1.36	30	
2-Chloroethyl vinyl ether	7.91	1.00	ug/L	10.0		79.1	64-120	2.96	30	Q
4-Methyl-2-Pentanone	51.9	2.50	ug/L	50.0		104	67-133	1.89	30	
cis-1,3-Dichloropropene	10.7	0.20	ug/L	10.0		107	80-124	3.78	30	
Toluene	9.41	0.20	ug/L	10.0		94.1	80-120	2.85	30	
trans-1,3-Dichloropropene	8.58	0.20	ug/L	10.0		85.8	71-127	4.14	30	
2-Hexanone	54.0	5.00	ug/L	50.0		108	69-133	2.69	30	
1,1,2-Trichloroethane	9.35	0.20	ug/L	10.0		93.5	80-121	4.72	30	
1,3-Dichloropropane	9.68	0.10	ug/L	10.0		96.8	80-120	3.14	30	
Tetrachloroethene	8.91	0.20	ug/L	10.0		89.1	80-120	4.42	30	
Dibromochloromethane	10.3	0.20	ug/L	10.0		103	65-135	3.43	30	
1,2-Dibromoethane	10.5	0.10	ug/L	10.0		105	80-121	3.48	30	
Chlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	5.69	30	
Ethylbenzene	10.0	0.20	ug/L	10.0		100	80-120	4.00	30	
1,1,1,2-Tetrachloroethane	9.87	0.20	ug/L	10.0		98.7	80-120	4.01	30	
m,p-Xylene	20.9	0.40	ug/L	20.0		104	80-121	3.36	30	
o-Xylene	10.5	0.20	ug/L	10.0		105	80-121	4.30	30	
Xylenes, total	31.4	0.60	ug/L	30.0		105	76-127	3.68	30	
Styrene	10.4	0.20	ug/L	10.0		104	80-124	3.27	30	
Bromoform	8.69	0.20	ug/L	10.0		86.9	51-134	6.57	30	
1,1,2,2-Tetrachloroethane	9.34	0.20	ug/L	10.0		93.4	77-123	3.04	30	
1,2,3-Trichloropropane	9.60	0.25	ug/L	10.0		96.0	76-125	2.96	30	
trans-1,4-Dichloro 2-Butene	8.40	1.00	ug/L	10.0		84.0	55-129	1.58	30	
n-Propylbenzene	10.4	0.20	ug/L	10.0		104	78-130	6.09	30	
Bromobenzene	9.54	0.20	ug/L	10.0		95.4	80-120	4.29	30	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BJJ0153 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJJ0153-BSD1)				Prepared: 06-Oct-2021 Analyzed: 06-Oct-2021 11:46						
Isopropyl Benzene	11.0	0.20	ug/L	10.0		110	80-128	4.96	30	
2-Chlorotoluene	10.1	0.10	ug/L	10.0		101	78-122	3.59	30	
4-Chlorotoluene	9.89	0.20	ug/L	10.0		98.9	80-121	5.11	30	
t-Butylbenzene	10.8	0.20	ug/L	10.0		108	78-125	5.57	30	
1,3,5-Trimethylbenzene	10.8	0.20	ug/L	10.0		108	80-129	5.44	30	
1,2,4-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-127	5.30	30	
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129	4.54	30	
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0		110	79-130	5.85	30	
1,3-Dichlorobenzene	9.76	0.20	ug/L	10.0		97.6	80-120	3.34	30	
1,4-Dichlorobenzene	9.09	0.20	ug/L	10.0		90.9	80-120	3.45	30	
n-Butylbenzene	10.7	0.20	ug/L	10.0		107	74-129	4.08	30	
1,2-Dichlorobenzene	9.53	0.20	ug/L	10.0		95.3	80-120	1.89	30	
1,2-Dibromo-3-chloropropane	8.80	0.50	ug/L	10.0		88.0	62-123	2.13	30	
1,2,4-Trichlorobenzene	8.30	0.50	ug/L	10.0		83.0	64-124	7.22	30	Q
Hexachloro-1,3-Butadiene	9.90	0.50	ug/L	10.0		99.0	58-123	10.10	30	B
Naphthalene	8.23	0.50	ug/L	10.0		82.3	50-134	3.35	30	Q
1,2,3-Trichlorobenzene	8.54	0.50	ug/L	10.0		85.4	49-133	6.63	30	
Dichlorodifluoromethane	11.2	0.20	ug/L	10.0		112	48-147	0.86	30	
Surrogate: 1,2-Dichloroethane-d4	4.91		ug/L	*5.00*		*98.3*	*80-129*			
Surrogate: Toluene-d8	4.98		ug/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.97		ug/L	*5.00*		*99.5*	*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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJJ0091 - 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 (BJJ0091-BLK1)				Prepared: 05-Oct-2021	Analyzed: 11-Oct-2021 17:00					
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	6.54		ug/L	*10.0*		*65.4*	*33.6-120*			
LCS (BJJ0091-BS1)				Prepared: 05-Oct-2021	Analyzed: 11-Oct-2021 17:25					
1,4-Dioxane	5.2	0.4	ug/L	10.0		51.6	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.29		ug/L	*10.0*		*62.9*	*33.6-120*			
LCS Dup (BJJ0091-BSD1)				Prepared: 05-Oct-2021	Analyzed: 11-Oct-2021 17:50					
1,4-Dioxane	5.0	0.4	ug/L	10.0		49.8	39.9-120	3.58	30	
Surrogate: 1,4-Dioxane-d8	6.10		ug/L	*10.0*		*61.0*	*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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJJ0125 - 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 (BJJ0125-BLK1)				Prepared: 06-Oct-2021 Analyzed: 26-Oct-2021 11:25						
1,4-Dioxane	ND	0.4	ug/L							U
Surrogate: 1,4-Dioxane-d8	5.80		ug/L	*10.0*		*58.0*	*33.6-120*			
LCS (BJJ0125-BS1)				Prepared: 06-Oct-2021 Analyzed: 26-Oct-2021 11:50						
1,4-Dioxane	5.0	0.4	ug/L	10.0		50.2	39.9-120			
Surrogate: 1,4-Dioxane-d8	6.03		ug/L	*10.0*		*60.3*	*33.6-120*			
LCS Dup (BJJ0125-BSD1)				Prepared: 06-Oct-2021 Analyzed: 26-Oct-2021 12:15						
1,4-Dioxane	4.9	0.4	ug/L	10.0		49.1	39.9-120	2.27	30	
Surrogate: 1,4-Dioxane-d8	6.02		ug/L	*10.0*		*60.2*	*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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BJJ0047 - EPA 3510C SepF

Instrument: FID4 Analyst: TWC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0047-BLK1)				Prepared: 05-Oct-2021 Analyzed: 06-Oct-2021 23:37						
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	0.246		mg/L	*0.225*		*109*	*50-150*			
Surrogate: n-Triacontane	0.246		mg/L	*0.225*		*109*	*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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0197 - TWM EPA 7470A

Instrument: HYDRA Analyst: ml

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0197-BLK1)				Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:40						
Mercury	ND	0.00100	mg/L							U
LCS (BJJ0197-BS1)				Prepared: 07-Oct-2021 Analyzed: 12-Oct-2021 11:43						
Mercury	0.00167	0.00100	mg/L	0.00200		83.5	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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0391-BLK1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:38						
Barium	ND	0.500	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Chromium	ND	0.0100	mg/L							U
Cobalt	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							U
Manganese	ND	0.0100	mg/L							U
Potassium	ND	0.500	mg/L							U
Silver	ND	0.0050	mg/L							U
Sodium	ND	0.500	mg/L							U
Sodium	ND	50.0	mg/L							U
Vanadium	ND	0.0030	mg/L							U
Blank (BJJ0391-BLK2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:25						
Aluminum	ND	1.00	mg/L							U
Calcium	ND	0.500	mg/L							U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Nickel	ND	0.0100	mg/L							U
Zinc	ND	0.0200	mg/L							U
LCS (BJJ0391-BS1)				Prepared: 14-Oct-2021 Analyzed: 18-Oct-2021 18:41						
Barium	2.09	0.500	mg/L	2.00		105	80-120			
Beryllium	0.536	0.0100	mg/L	0.500		107	80-120			
Cadmium	0.561	0.0020	mg/L	0.500		112	80-120			
Chromium	0.522	0.0100	mg/L	0.500		104	80-120			
Cobalt	0.548	0.0100	mg/L	0.500		110	80-120			
Copper	0.472	0.0030	mg/L	0.500		94.3	80-120			
Manganese	0.512	0.0100	mg/L	0.500		102	80-120			
Potassium	10.2	0.500	mg/L	10.0		102	80-120			
Silver	0.513	0.0050	mg/L	0.500		103	80-120			
Sodium	10.5	0.500	mg/L	10.0		105	80-120			
Vanadium	0.500	0.0030	mg/L	0.500		100	80-120			
LCS (BJJ0391-BS2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:28						

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0391 - TWC EPA 3010A

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJJ0391-BS2)				Prepared: 14-Oct-2021 Analyzed: 19-Oct-2021 14:28						
Aluminum	2.05	1.00	mg/L	2.00		102	80-120			
Calcium	9.71	0.500	mg/L	10.0		97.1	80-120			
Iron	1.88	0.200	mg/L	2.00		94.0	80-120			
Magnesium	10.6	0.500	mg/L	10.0		106	80-120			
Nickel	0.507	0.0100	mg/L	0.500		101	80-120			
Zinc	0.494	0.0200	mg/L	0.500		98.8	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	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0756 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0756-BLK1)				Prepared: 27-Oct-2021 Analyzed: 28-Oct-2021 19:49							
Antimony	121	ND	0.00300	mg/L							U
Antimony	123	ND	0.00300	mg/L							U
Lead	208	ND	0.0100	mg/L							U
Thallium	205	ND	0.00200	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U
LCS (BJJ0756-BS1)				Prepared: 27-Oct-2021 Analyzed: 28-Oct-2021 19:54							
Antimony	121	0.0257	0.00300	mg/L	0.0250		103	80-120			
Antimony	123	0.0250	0.00300	mg/L	0.0250		99.8	80-120			
Lead	208	0.0266	0.0100	mg/L	0.0250		106	80-120			
Thallium	205	0.0259	0.00200	mg/L	0.0250		103	80-120			
Arsenic	75a	0.0243	0.00300	mg/L	0.0250		97.0	80-120			
Selenium	78	0.0785	0.0250	mg/L	0.0800		98.2	80-120			
Duplicate (BJJ0756-DUP1)			**Source: 21J0035-09**	Prepared: 27-Oct-2021 Analyzed: 29-Oct-2021 00:58							
Antimony	121	ND	0.00300	mg/L		ND					U
Lead	208	ND	0.0100	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Selenium	78	ND	0.0250	mg/L		ND					U
Matrix Spike (BJJ0756-MS1)			**Source: 21J0035-09**	Prepared: 27-Oct-2021 Analyzed: 29-Oct-2021 01:02							
Antimony	121	0.0247	0.00300	mg/L	0.0250	ND	99.0	75-125			
Lead	208	0.0238	0.0100	mg/L	0.0250	ND	95.2	75-125			
Thallium	205	0.0246	0.00200	mg/L	0.0250	ND	98.2	75-125			
Arsenic	75a	0.0239	0.00300	mg/L	0.0250	ND	95.7	75-125			
Selenium	78	0.0740	0.0250	mg/L	0.0800	ND	92.5	75-125			

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

Matrix Spike Dup (BJJ0756-MSD1)			**Source: 21J0035-09**	Prepared: 27-Oct-2021 Analyzed: 29-Oct-2021 01:08							
Antimony	121	0.0251	0.00300	mg/L	0.0250	ND	101	75-125	1.58	20	
Lead	208	0.0249	0.0100	mg/L	0.0250	ND	99.5	75-125	4.40	20	
Thallium	205	0.0252	0.00200	mg/L	0.0250	ND	101	75-125	2.53	20	
Arsenic	75a	0.0244	0.00300	mg/L	0.0250	ND	97.5	75-125	1.84	20	

Golder Associates	Project: Landsburg	
18300 NE Union Hill Road Suite 200	Project Number: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BJJ0756 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJJ0756-MSD1)		**Source: 21J0035-09**			Prepared: 27-Oct-2021 Analyzed: 29-Oct-2021 01:08						
Selenium	78	0.0753	0.0250	mg/L	0.0800	ND	94.1	75-125	1.72	20	

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: Landsburg	**Reported:**
Redmond WA, 98052-3333	Project Manager: Gary Zimmerman	02-Nov-2021 10:08

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJJ0333 - WMN (No Prep)

Instrument: ICP2 Analyst: MVP

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJJ0333-BLK1)				Prepared: 12-Oct-2021 Analyzed: 15-Oct-2021 18:54							
Cobalt, Dissolved	0.0006	0.0004	0.0030	mg/L							J
Iron, Dissolved	ND	0.0107	0.0500	mg/L							U
Manganese, Dissolved	ND	0.0016	0.0040	mg/L							U
LCS (BJJ0333-BS1)				Prepared: 12-Oct-2021 Analyzed: 15-Oct-2021 18:57							
Cobalt, Dissolved	0.539	0.0004	0.0030	mg/L	0.500		108	80-120			
Iron, Dissolved	2.07	0.0108	0.0505	mg/L	2.00		103	80-120			
Manganese, Dissolved	0.510	0.0016	0.0040	mg/L	0.500		102	80-120			

Golder Associates	Project: Landsburg	
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Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 200.8 UCT-KED in Water	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
EPA 6010D in Water	
Silver	WADOE,NELAP,DoD-ELAP
Aluminum	WADOE,NELAP,DoD-ELAP
Barium	WADOE,NELAP,DoD-ELAP,ADEC
Beryllium	WADOE,NELAP,DoD-ELAP
Calcium	WADOE,NELAP,DoD-ELAP
Cadmium	WADOE,NELAP,DoD-ELAP,ADEC
Cobalt	WADOE,NELAP,DoD-ELAP
Chromium	WADOE,NELAP,DoD-ELAP,ADEC
Copper	WADOE,NELAP,DoD-ELAP
Iron	WADOE,NELAP,DoD-ELAP
Potassium	WADOE,NELAP,DoD-ELAP
Magnesium	WADOE,NELAP,DoD-ELAP
Manganese	WADOE,NELAP,DoD-ELAP
Sodium	DoD-ELAP,WADOE,NELAP
Sodium-1	DoD-ELAP
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
EPA 7470A in Water	
Mercury	WADOE,NELAP,DoD-ELAP
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

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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
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

Golder Associates	Project: Landsburg	
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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
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

Golder Associates	Project: Landsburg	
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Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
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	02-Nov-2021 10:08

Notes and Definitions

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

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-8-0921

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 September 30, 2021 **Time** 14:55

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: NA 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
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-8
Date 09/30/2021
Time Begin Purge 14:15
Time Collect Sample 14:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
6.5	14:20	6.87	434	13.3	1.267	-124.8	5.08
6.85	14:25	6.69	429	13.5	0.8	-110.8	4.32
6.75	14:30	6.72	503	13	0.66	-102.5	2.02
6.95	14:35	6.72	501	13	0.65	-98.6	1.58

Comments:
Clear, no sheen, no odor.
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 350ml/min mL/min

Sampler TD **Date** September 30, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-5-0921

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 September 30, 2021 **Time** 13:40

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: NA 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, 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-5
Date 09/30/2021
Time Begin Purge 13:10
Time Collect Sample 13:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
14.36	13:15	6.83	512	10.8	0.77	-22.5	0.22
14.37	13:20	6.74	514	11	0.7	-30.2	3.87
14.37	13:25	6.74	514	11.1	0.7	-30.8	1.8
14.37	13:30	6.73	515	11.1	0.69	-32.8	1.53
14.37	13:35	6.72	515	11.2	0.69	-34.9	1.77

Comments:
Clear, no sheen, no odor.
Grundfos: ~135 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1400 mL/min

Sampler TD **Date** September 30, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-3-0921

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 September 30, 2021 **Time** 12:40

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: NA 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	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3
Date 09/30/2021
Time Begin Purge 12:05
Time Collect Sample 12:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.32	12:10	7.59	228.6	11.4	2.72	-54.4	0.26
12.32	12:15	7.63	237.3	11.7	0.85	-33.8	0.20
12.26	12:20	7.61	238.7	11.8	0.76	-24.8	0.29
12.26	12:23	7.61	239.8	11.8	0.75	-23.5	0.59
12.26	12:26	7.61	239.6	11.8	0.75	-27.7	0.27
12.26	12:29	7.61	241.6	11.9	0.73	-48.1	0.37
12.4	12:32	7.61	241.5	11.9	0.72	-55	0.31
12.4	12:35	7.6	242	11.9	0.74	-57.2	0.28

Comments:
Clear, no sheen, no odor.
Grundfos: ~135 Hz
Packer: 130 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1200 mL/min

Sampler TD **Date** September 30, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-9-0921

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 September 30, 2021 **Time** 11:30

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: 100.11 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
3-40 mL	VOA	VOA vial	HCl
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
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9
Date 09/30/2021
Time Begin Purge 11:05
Time Collect Sample 11:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
100.11	11:10	6.97	495.5	11	1.59	-31.8	0.96
100.11	11:15	6.9	495.9	11	1.09	-50.5	1.77
100.11	11:20	6.89	495.4	11	1.01	-54.0	1.70
100.11	11:23	6.89	494.6	11	0.9	-58.9	0.81
100.11	11:26	6.88	494.4	11	0.89	-59.5	.74
100.1	11:29	6.88	494.2	11	0.88	-60.1	.2

Comments:
Clear, no odor, no sheen.
Grundfos:
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 51
Flow Rate: mL/min

Sampler _____ **Date** September 30, 2021

Supervisor _____ **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-7-0921

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 September 30, 2021 **Time** 09:45

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: 229.03 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
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-7
Date 09/30/2021
Time Begin Purge 08:50
Time Collect Sample 09:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
229.03	08:55	7.47	373	11	2.31	124.3	1.22
229.03	09:00	7.46	379.1	11.6	2.4	122.8	1.37
229.03	09:05	7.44	403.5	13.9	2.21	116.8	0.93
229.03	09:10	7.41	422.7	15.6	1.99	111.7	1.14
229.03	09:15	7.4	413.7	14.7	1.54	87.5	1.24
229.03	09:20	7.33	421.7	14.7	1.15	11.5	1.12
229.03	09:25	7.22	430.2	14.7	1.05	-54.9	1.05
229.03	09:30	7.16	439.8	14.6	0.97	-72.5	0.69
229.03	09:35	7.08	459.7	14.7	0.92	-77.1	2.69
229.03	09:40	6.97	475.3	14.7	0.87	-78.0	0.71

Comments:
Clear, no sheen, no odor.
Grundfos: 320 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 560 mL/min

Sampler TD **Date** September 30, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-6-0921

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 September 29, 2021 **Time** 17:30

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: NA 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
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
1-500 mL	Total Metals	HDPE	HNO3
1-500 mL	Dissolved Metals	HDPE	HNO3 + field filter

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6
Date 09/29/2021
Time Begin Purge 17:05
Time Collect Sample 17:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
44.37	17:10	6.89	207.2	10.1	0.87	-58.1	6.58
44.37	17:15	6.84	208.1	10.8	0.79	-63.3	2.28
44.37	17:20	6.81	206.2	10.9	0.77	-62.6	1.88
44.37	17:23	6.78	204.4	10.9	0.76	-62.0	1.53
44.37	17:26	6.76	203.4	10.9	0.75	-61.8	1.03

Comments:
CLEAR, NO SHEEN, NO ODOR.
Grundfos: 180 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 1080 mL/min

Sampler TD **Date** September 29, 2021

Supervisor  **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-14-0921

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 September 29, 2021 **Time** 16:20

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: 166.96 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 09/29/2021
Time Begin Purge 15:45
Time Collect Sample 16:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
166.96	15:50	6.48	834	12.1	1.1	23.0	1.41
167.1	15:55	6.47	828	11.5	0.83	-27.6	4.01
167.35	16:00	6.48	822	11.3	0.72	-45.7	2.62
167.35	16:05	6.47	798	11.3	0.7	-51.3	1.92
167.35	16:10	6.47	784	11.2	0.69	-53.9	1.53
167.35	16:13	6.47	783	11.2	0.69	-54.1	1.79
167.35	16:16	6.47	782	11.2	0.69	-54.6	1.49

Comments:
Clear, no sheen, no odor.
Grundfos: N/A
Packer: N/A
Tank: 140
Throttle: 115
CPM: 2
CID: 49
Flow Rate: 350 mL/min

Sampler TD **Date** September 29, 2021

Supervisor  **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-15-0921

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 September 29, 2021 **Time** 14:40

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: NA ft BTOC

Screened Interval: 235' - 245' BGS

Sand Pack Interval: 231' - 245' 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
3-40 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-15
Date 09/29/2021
Time Begin Purge 14:10
Time Collect Sample 14:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
152.38	14:15	7.12	348.3	10.3	1.56	-116.2	3.33
152.39	14:20	7.13	349.2	10.3	1.38	-124.4	2.33
152.39	14:25	7.15	351.9	10.2	1.17	-131.9	1.54
152.4	14:30	7.16	353.1	10.2	1.05	-136.4	1.14
152.39	14:35	7.17	353.6	10.2	0.99	-139.4	0.98

Comments:
Clear, no sheen, no odor.
Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 95
CPM: 2
CID: 53
Flow Rate: 400 mL/min

Sampler TD **Date** September 29, 2021

Supervisor  **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-11-0921

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 September 29, 2021 **Time** 13:10

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: NA 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
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11
Date 09/29/2021
Time Begin Purge 11:25
Time Collect Sample 13:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
158.2	11:30	7.73	391.8	10.8	5.74	84.3	0.79
158.2	12:35	7.1	400.4	10.6	1.87	-23.3	0.62
158.2	12:40	7.06	399.4	10.5	1.55	-40.1	0.58
158.2	12:45	7.03	399	10.5	1.34	-52.7	0.57
158.2	12:50	7.02	398.8	10.5	1.22	-60.7	0.52
158.2	12:55	7.01	398.8	10.6	1.15	-66.2	0.48
158.2	13:00	7	398.6	10.5	1.05	-72.1	0.39
158.2	13:05	7	398.4	10.6	1.03	-75.0	0.38

Comments:
Clear, no odor,no sheen.
Grundfos: N/A
Packer: N/A
Tank: 130
Throttle: 110
CPM: 1
CID: 15
Flow Rate: 400 mL/min

Sampler TDogan **Date** September 29, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-FB-0921

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 September 29, 2021 **Time** 11:35

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: NA ft BTOC

Screened Interval: N/A

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
3-40 mL	VOA	VOA vial	HCl
2-500 mL	1,4-dioxane	500 mL amber bottles	None
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB
Date 09/29/2021
Time Begin Purge 11:23
Time Collect Sample 11:35

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

Comments:
DI water .
Grundfos: N/A
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: mL/min

Sampler TD **Date** September 29, 2021

Supervisor  **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-10-0921

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 September 29, 2021 **Time** 11:10

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: NA 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
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10
Date 09/29/2021
Time Begin Purge 10:35
Time Collect Sample 11:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
1.9	10:40	8.4	271.6	11.4	0.93	-22.8	3.13
2	10:45	8.48	271.7	11.4	0.85	-141.4	0.24
2.7	10:50	8.5	271.9	11.4	0.82	-187.7	0.59
3.03	10:55	8.5	272.2	11.4	0.77	-200.4	0.14
3.54	11:00	8.51	272.4	11.4	0.75	-223.1	0.65
4.81	11:03	8.51	272.5	11.4	0.75	-229.3	0.25
4.01	11:06	8.51	272.5	11.4	0.74	-228.5	0.24

Comments:
Clear, no sheen, .
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 40
CPM: 2
CID: 50
Flow Rate: 400 mL/min

Sampler TD **Date** September 29, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-12-0921

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 September 29, 2021 **Time** 10:10

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: NA ft BTOC

Screened Interval: 15' - 25' BGS

Sand Pack Interval: 11' - 25' BGS

Packer Depth: N/A

Sample Description

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
2-500 mL	1,4-dioxane	500 mL amber bottles	None
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12
Date 09/29/2021
Time Begin Purge 09:20
Time Collect Sample 10:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
11.6	09:25	6.52	475.8	11	1.12	6.2	13.8
11.6	09:30	6.38	472.7	10.9	0.92	-33.6	13.1
11.6	09:35	6.37	469.2	10.8	0.82	-55.0	11.7
11.6	09:40	6.37	469.1	10.8	0.81	-55.9	10.6
11.6	09:45	6.4	493.7	10.8	0.78	-67.1	7.23
11.6	09:50	6.42	517	10.8	0.78	-68.3	5.55
11.6	09:55	6.43	546	10.8	0.76	-71.0	3.12
11.6	10:00	6.44	551	10.8	0.75	-72.2	3.12
11.6	10:05	6.44	547	10.8	0.76	-71.1	3.08

Comments:
Clear, no odor .
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 20
CPM: 2
CID: 47
Flow Rate: 450 mL/min

Sampler TD **Date** September 29, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-13R-0921

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 September 28, 2021 **Time** 15:05

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: NA 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
3-40 mL	VOA	VOA vial	HCl
2-500 mL	1,4-dioxane	500 mL amber bottles	None
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R
Date 09/28/2021
Time Begin Purge 14:25
Time Collect Sample 15:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.62	14:30	7.2	682	11	0.98	-176.1	0.95
12.61	14:35	7.17	683	11	0.9	-202.5	0.73
12.61	14:40	7.18	683	11	0.86	-208.5	0.56
12.62	14:45	7.2	682	10.9	0.78	-218.1	0.38
12.61	14:50	7.21	683	11	0.77	-218.5	0.29
12.61	14:55	7.21	683	11	0.78	-219.1	0.26

Comments:
Clear, no odor.
Grundfos: N/A
Packer: N/A
Tank: 110
Throttle: 35
CPM: 2
CID: 48
Flow Rate: 350 mL/min

Sampler TD **Date** September 28, 2021

Supervisor **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-4-0921

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 September 28, 2021 **Time** 13:25

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: 10.2 ft BTOC

Screened Interval: 195' - 209.7' BGS

Sand Pack Interval: 189' - 209.7' BGS

Packer Depth: 187.3' 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
9-40 mL	VOA	VOA vial	HCl
6-500 mL	1,4-dioxane	500 mL amber bottles	None
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

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4
Date 09/28/2021
Time Begin Purge 12:50
Time Collect Sample 13:25

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
10.2	12:55	7.07	751	11.4	0.82	-148.2	0.25
10.2	13:00	6.82	752	11.5	0.75	-207.5	0.28
10.2	13:05	6.73	753	11.5	0.71	-204.9	0.27
10.2	13:10	6.72	752	11.4	0.71	-203.8	0.27
10.2	13:15	6.71	752	11.4	0.7	-203.2	0.28

Comments:
Clear, slight sulfur odor. MS and MSD collected
Grundfos: 80 Hz
Packer: 110 psi
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 540 ml/min mL/min

Sampler TDI **Date** September 28, 2021

Supervisor  **Date** October 5, 2021

SAMPLE INTEGRITY DATA SHEET

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

Site Location Ravensdale, WA **Sample ID** LMW-2-0921 / LMW-2-0921-D

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

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

Type of Sampler Dedicated Pump Grundfos

Date September 28, 2021 **Time** 11:50 / 12:00

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: 8.09 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 sheen, no odor.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
6-40 mL	VOA	VOA vial	HCl
4-500 mL	1,4-dioxane	500 mL amber bottles	None
2-500 mL	Total Metals	HDPE	HNO3
8-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
4-40 mL	TPH-Gx (HOLD)	VOA vial	HCl

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2
Date 09/28/2021
Time Begin Purge 11:10
Time Collect Sample 11:50

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
8.1	11:15	6.86	764	11.4	1.17	56.5	1.31
8.1	11:20	6.67	771	11.9	0.93	-53.5	1.29
8.1	11:25	6.67	775	12.2	0.83	-166.1	0.87
8.1	11:30	6.68	776	12.2	0.81	-186.4	0.59
8.1	11:35	6.67	773	12.3	0.78	-209.8	0.37
8.1	11:40	6.68	776	12.3	0.77	-211.3	0.31
8.1	11:45	6.67	774	12.3	0.75	-214.6	0.28

Comments:
Clear, no odor, no sheen. Field duplicate collected LMW-2-0921-D
Grundfos: ~80 Hz
Packer: N/A
Tank: N/A
Throttle: N/A
CPM: N/A
CID: N/A
Flow Rate: 300 mL/min

Sampler _____ **Date** September 28, 2021

Supervisor _____ **Date** October 5, 2021

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