



REPORT

Compliance Monitoring Report
March 2023 Groundwater Sampling
Landsburg Mine Site

Submitted to:

Washington Department of Ecology

15700 Dayton Ave. N., Shoreline WA 98133

Submitted by:

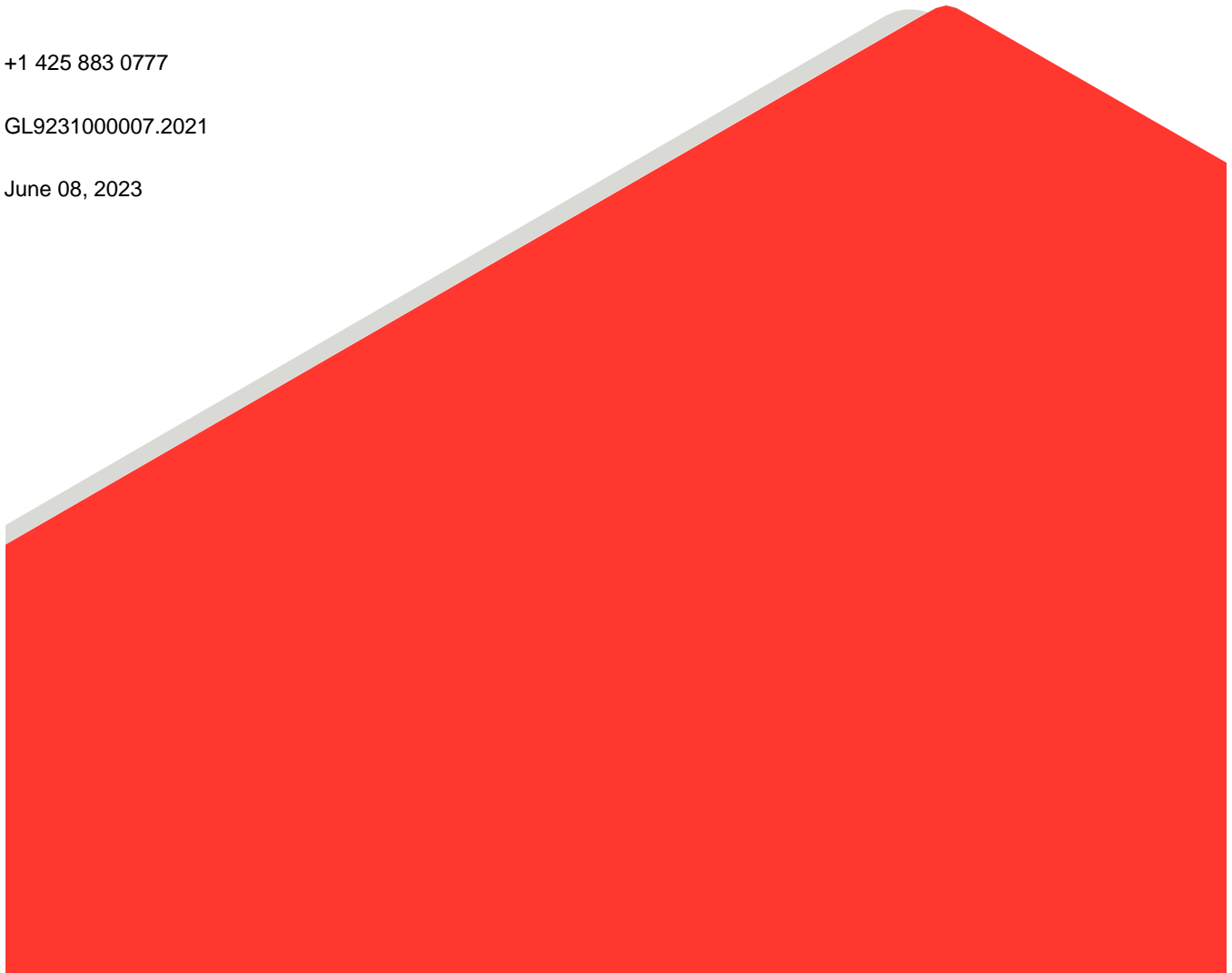
WSP USA Inc.

18300 NE Union Hill Road, Suite 200, Redmond, Washington, USA 98052

+1 425 883 0777

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Vance Atkins, LHG - Ecology

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 completion of remediation actions at the Landsburg Mine Site (the Site). Additional groundwater monitoring requirements are specified in the Amendment to the Cleanup Action Plan (CAP) (Ecology 2021). This report presents the results of the March 2023 confirmational monitoring event.

The event was conducted on March 20, 21, and 22, 2023, 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
 - Semivolatile Organic Compounds (SVOCs) by GC/MS, including 1,4-Dioxane following USEPA SW-846 Method 8270E
 - Total Petroleum Hydrocarbons (TPHs) by NWTPH-HCID
 - Low-Level Polychlorinated Biphenyls (PCBs) by USEPA SW-846 Method 8082A
 - 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.

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

The laboratory data packages underwent data validation. Items of note are provided in a validation memorandum in Appendix A. In general, data were found to be acceptable with minor qualification, with the following exception: the analytical result for 2-chloroethyl vinyl ether for LMW-4-0922 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-4-0922 was rejected. 2-chloroethyl vinyl ether has never been detected at the Site.

The Field Blank and one of the two Trip Blanks contained dibutyl phthalate and acetone, respectively, which are common laboratory contaminants. Dibutyl phthalate was not detected at any of the Site wells, but acetone was detected in water from LMW-5. Associated detected results were qualified as "U" at the reporting limit due to trip blank contamination. Data qualifiers are defined, and all data qualifiers assigned under the data validation process are presented in the Appendix A data validation memorandum.

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

3.0 RESULTS

The March 2023 groundwater monitoring results are summarized below:

- Laboratory analyses did not detect TPH, PCBs, or pesticides 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) or above their respective laboratory reporting limits.
- There were no SVOCs detected in groundwater above the trigger level concentrations prescribed in the CMP, except for 1,4-dioxane.
 - 1,4-dioxane was detected in LMW-2 (2.0 µg/L) and LMW-4 (1.9 µg/L). 1,4-dioxane has been detected in prior sampling events only in these wells and LMW-12. 1,4-dioxane was not detected in LMW-12 (<0.4 µg/L) during this round or the previous sampling round. Under the approved Amendment to the CAP (Ecology 2021), 5 years of quarterly groundwater samples (20 rounds of sampling) will be collected to conduct a statistical analysis on 1,4-dioxane trends (CAP Amendment Section 4.2). The status of the quarterly sampling for 1,4-dioxane is as follows:
 - LMW-2 and LMW-4 have 22 rounds of sampling data.
 - LMW-10 has 21 rounds of 1,4-dioxane sampling data. 1,4-Dioxane has never been detected at LMW-10.

- LMW-12 has 20 rounds of 1,4-dioxane sampling data.
- LMW-13R has 20 rounds of 1,4-dioxane sampling data. 1,4-Dioxane has never been detected at LMW-13R.

As all target wells now have at least 20 discrete rounds of 1,4-dioxane sampling data, trend analysis will be conducted and submitted to Ecology in a technical memorandum.

- Metals detected in groundwater samples during the current sampling round include the following:
 - The groundwater samples from LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-11, LMW-12, LMW-13, LMW-14, and LMW-15 contained iron concentrations above the laboratory reporting limit, but below the MTCA Method B cleanup level of 11 milligrams per liter (mg/L). Iron 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 March 2023 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 0.00844 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). Arsenic was also detected in groundwater from LMW-15 at a concentration of 0.00321 mg/L, which is below both the MTCA Method A groundwater cleanup level and the Washington State primary drinking water MCL. 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.

4.0 NEXT SAMPLING EVENT

The next compliance monitoring event is a confirmational monitoring event scheduled for sometime during September-October 2023, and will include sampling of all Site groundwater monitoring wells: LMW-2 through LMW-15, and sampling of the private Landsburg Estates well.

WSP USA Inc.



Autumn Pearson
Assistant Consultant



Gary Zimmerman
Vice President

AP/GLZ/ks

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- Golder Associates Inc. (Golder). 2020. Landsburg Mine Site Quarterly Groundwater Monitoring Report March 2020 Sampling. Landsburg PLP Group, Black Diamond, Washington. June 18.
- Washington State Department of Ecology (Ecology). 2017. Exhibit D of the Consent Decree – Compliance Monitoring Plan Landsburg Mine Site MTCA Remediation Project, Ravensdale, Washington. Prepared by WSP. June 7.
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Tables

Table 1: Groundwater Elevation Data, Landsburg Mine Site, March 20, 2023

	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	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023	3/20/2023
Time of data collection	10:12 AM	9:15 AM	12:18 PM	9:33 AM	12:29 PM	10:03 AM	12:01 PM	12:25 PM	11:43 AM	9:40 AM	11:36 AM	9:49 AM	9:47 AM	10:22 AM	11:29 AM
Measured to Top of PVC (ft btc)	132.01	6.11	11.24	7.50	12.68	22.90	212.13	3.32	97.76	0.37	155.67	6.69	7.23	157.97	149.62
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)	633.35	611.68	645.51	611.77	645.59	609.43	559.38	643.65	646.23	618.61	646.52	618.66	618.63	647.15	646.84

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: March 2023 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
		3/20/2023	3/20/2023	3/22/2023	3/20/2023	3/22/2023	3/21/2023	3/21/2023	3/22/2023	3/22/2023	3/20/2023	3/21/2023	3/20/2023	3/20/2023	3/21/2023	3/21/2023	3/22/2023	-	-
Field Parameter																			
Temperature	°C	10.7	-	11.7	10.3	10.8	9.8	12.9	10.1	10.3	9.4	10	8.6	9.3	10.1	9.6	-	-	-
pH	stnd	6.83	-	7.91	6.86	7.13	6.95	7.2	7.25	7.06	8.74	7.42	6.71	7.35	6.73	7.59	-	-	-
Specific Conductance	uS/cm	1206	-	559.9	1217	1224	260.4	601.3	730	1182	432.7	558.4	559.9	1,092	1223	519	-	-	-
Dissolved Oxygen	mg/L	0.08	-	0.11	0.27	0.12	0.4	0.14	0.13	0.3	0.21	0.45	0.11	0.45	0.18	1.31	-	-	-
ORP	mV	9.6	-	19.6	8.1	-5.8	7.3	-27	-46.3	-7.1	-60	-11	-1.8	-43.6	1.9	-95.4	-	-	-
Turbidity	NTU	1.11	-	0.71	0.61	0.88	1.41	0.92	9.76	1.35	0.94	0.72	4.43	0.48	2.58	2.27	-	-	-
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	0.00844	0.003 U	0.003 U	0.003 U	0.00321	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	0.5 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
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	113	110	35.6	120	79.9	25.4	55.2	43.5	75.5	6.44	58.5	55.2	83.3	149	58.6	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	0.01 U	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	0.714	0.411	1.5	1.43	9.71	1.44	0.2 U	0.507	8.15	0.897	10.9	4.16	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	66.8	63.6	14.9	70.1	43.2	12.4	25.1	22.7	39.8	2.64	24.8	30.8	36.6	69.2	24	0.5 U	NA	NA
Manganese	mg/L	0.222	0.217	0.0271	0.204	0.209	0.0196	0.155	0.376	0.168	0.01 U	0.166	0.663	0.0257	0.637	0.373	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	3.46	3.27	1.6	3.78	2.43	0.668	2.93	1.44	2.26	1.13	1.99	2.49	2.9	3.6	1.86	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	19.2	18.6	9.71	22.4	14.4	6.47	38.5	7.86	13.2	81.8	22.3	6.6	74.4	13.5	11.7	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	5.45 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	5.32
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 U	5 U	5 U
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 U	1 U	1 U
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
Bromofrom	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	0.2 U	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	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Chloroethyl vinyl ether	ug/L	1 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 U	1 U	1 U
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: March 2023 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	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cis-1,2-Dichloroethene	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	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 U	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
1,1,1,2,2-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
Semi-Volatile Organic Compounds (SVOCs)																			
Phenol	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	NA	NA
bis(2-chloroethyl)Ether	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	NA	NA
2-Chlorophenol	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	NA	NA
1,3-Dichlorobenzene	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	NA	NA
1,4-Dichlorobenzene	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	NA	NA
Benzyl Alcohol	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
1,2-Dichlorobenzene	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	NA	NA
o-cresol	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	NA	NA
Bis(2-chloro-1-methylethyl) ether	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	NA	NA
p-cresol	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
N-Nitrosodi-n-propylamine	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	NA	NA
Hexachloroethane	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
Nitrobenzene	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	NA	NA
Isophorone	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	NA	NA
2-Nitrophenol	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
2,4-Dimethylphenol	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA

Table 2: March 2023 Groundwater Analytical Results Landsburg Mine Site

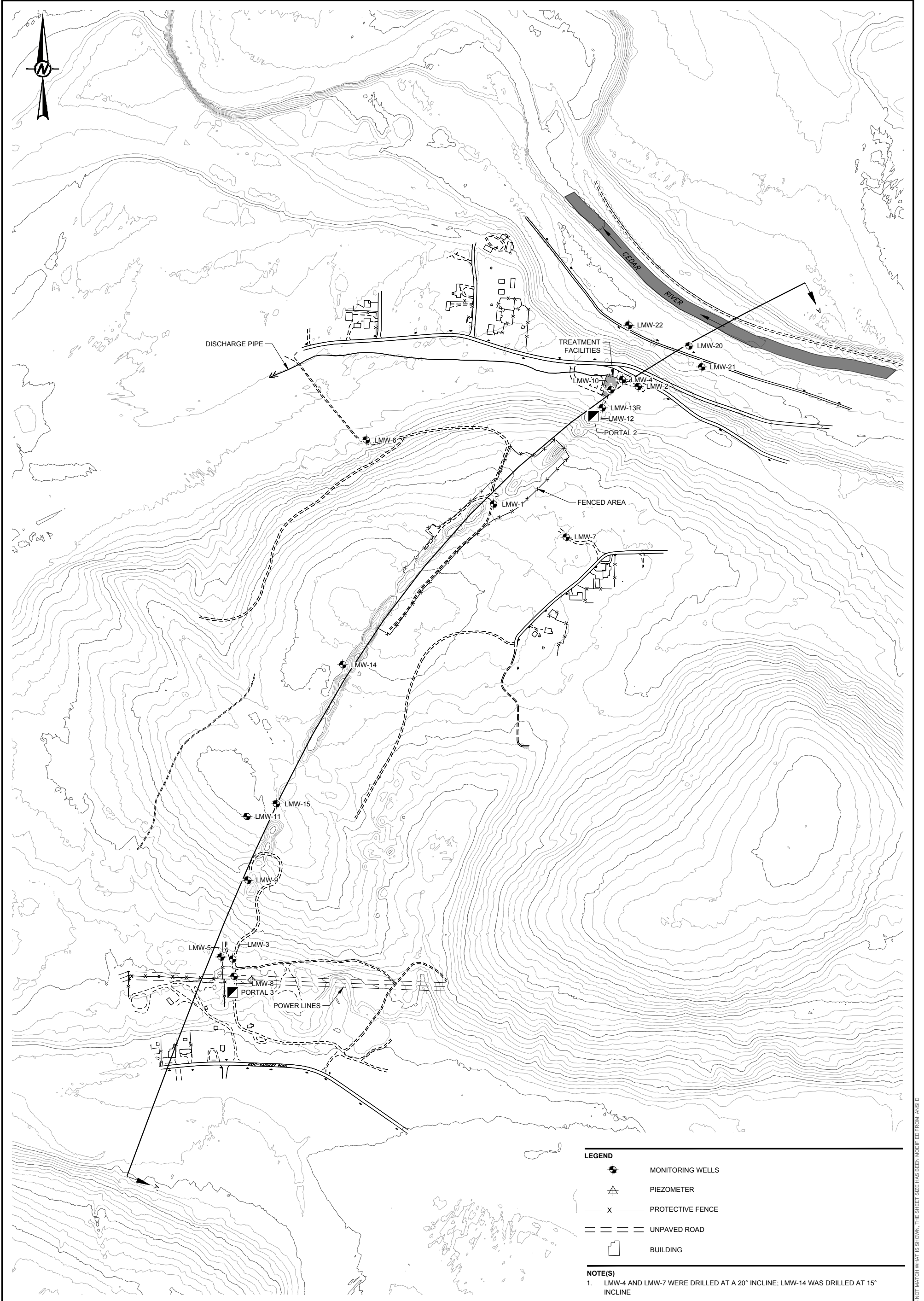
ANALYTE	UNITS	LMW-2	LMW-2 Duplicate	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-8	LMW-9	LMW-10	LMW-11	LMW-12	LMW-13R	LMW-14	LMW-15	Field Blank	Trip Blank 1	Trip Blank 2
Bis(2-Chloroethoxy)Methane	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	NA	NA
Benzoic Acid	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	NA	NA
2,4-Dichlorophenol	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
1,2,4-Trichlorobenzene	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	NA	NA
Naphthalene	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	NA	NA
4-Chloroaniline	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	NA	NA
Hexachlorobutadiene	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
4-Chloro-3-Methylphenol	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
2-Methylnaphthalene	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	NA	NA
Hexachlorocyclopentadiene	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	NA	NA
2,4,6-Trichlorophenol	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
2,4,5-Trichlorophenol	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	NA	NA
pcn-002	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	NA	NA
2-Nitroaniline	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
Dimethyl phthalate	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	NA	NA
Acenaphthylene	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	NA	NA
2,6-Dinitrotoluene	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
m-Nitroaniline	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
Acenaphthene	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	NA	NA
2,4-Dinitrophenol	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	NA	NA
Dibenzofuran	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	NA	NA
4-Nitrophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA
2,4-Dinitrotoluene	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
Fluorene	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	NA	NA
Diethyl phthalate	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	NA	NA
4-chlorophenyl-Phenylether	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	NA	NA
4-Nitroaniline	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
4,6-Dinitro-2-Methylphenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA
N-Nitrosodiphenylamine	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	NA	NA
Hexachlorobenzene	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	NA	NA
Pentachlorophenol	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA	NA
Phenanthrene	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	NA	NA
Anthracene	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	NA	NA
Carbazole	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	NA	NA
dibutyl phthalate	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	1.1	NA	NA
Fluoranthene	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	NA	NA
Pyrene	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	NA	NA
Butyl benzyl phthalate	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	NA	NA
Benz[a]anthracene	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	NA	NA
3,3'-Dichlorobenzidine	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	NA	NA
Chrysene	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	NA	NA
bis(2-ethylhexyl) Phthalate	ug/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA
Di-n-Octyl Phthalate	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	NA	NA
Benzo(a)pyrene	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	NA	NA
Indeno(1,2,3-cd)pyrene	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	NA	NA
Dibenzo(a,h)anthracene	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	NA	NA
Benzo(ghi)perylene	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	NA	NA
Benzofluoranthenes, Total (b+k+j)	ug/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	NA	NA
1-Methylnaphthalene	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	NA	NA
1,4-Dioxane	ug/L	2	1.8	0.4 U	1.9	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	NA	NA
Polychlorinated Biphenyls (PCBs)																			
PCB-aroclor 1016	ug/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
PCB-aroclor 1221	ug/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
PCB-aroclor 1232	ug/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
PCB-aroclor 1242	ug/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
PCB-aroclor 1248	ug/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
PCB-aroclor 1254	ug/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
PCB-aroclor 1260	ug/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

Table 2: March 2023 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
Pesticides																			
alpha-BHC	ug/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
beta-BHC	ug/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
Lindane	ug/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
delta-BHC	ug/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
Heptachlor	ug/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
Aldrin	ug/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
Heptachlor Epoxide	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
trans-Chlordane	ug/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
cis-Chlordane	ug/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
4,4'-DDE	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Dieldrin	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Endrin	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
4,4'-DDD	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Endrin Aldehyde	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
4,4'-DDT	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Endosulfan Sulfate	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Endrin Ketone	ug/L	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA
Methoxychlor	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	NA	NA
Toxaphene	ug/L	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 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.
Bold values indicate detections above the RL.
 NA - Not Applicable

Figures



LEGEND

	MONITORING WELLS
	PIEZOMETER
	PROTECTIVE FENCE
	UNPAVED ROAD
	BUILDING

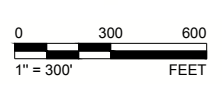
NOTE(S)
 1. LMW-4 AND LMW-7 WERE DRILLED AT A 20° INCLINE; LMW-14 WAS DRILLED AT 15° INCLINE

CLIENT
 LANDSBURG MINE SITE PLP GROUP

PROJECT
 LANDSBURG MINE SITE
 MTCA REMEDIAL ACTION

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

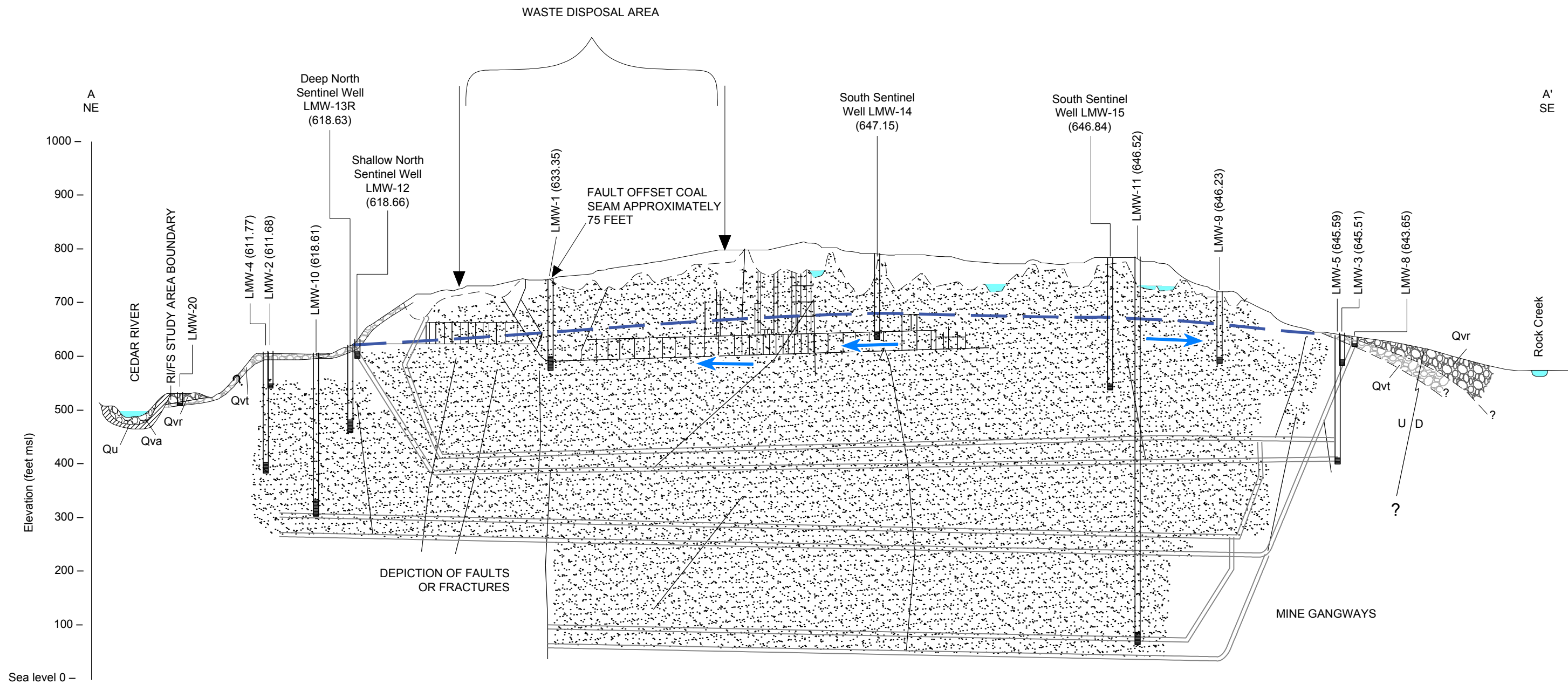
TITLE
GROUNDWATER MONITORING LOCATIONS



PROJECT NO.	PHASE	REV.	FIGURE
9231000005	1200	A	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3/D

Path: \\gdr\gdr_gdr\complex\data\office\Revised\geomatics\Borehole\Coal\Coal\Landburg\Map\A99_PROJECT\GL923100007_Env\Report\2021_LandsburgMine\02_PRODUCTION\DWG_1 File Name: 923100007_2021_05.dwg | Last Edited By: hbar Date: 2023-05-08 | Printed By: TBar Date: 2023-05-08 Time: 2:27:37 PM



LEGEND

- POTENTIOMETRIC SURFACE
- OUTLINE OF TRENCH BOTTOM
- LMW-2 (610.69) WELL ID (WATER LEVEL IN FT. AMSL)
- Qvt TILL, COMPACT MIXTURE OF GRAVEL OCCASIONAL BOULDERS IN CLAYEY SILTY SAND MATRIX
- SANDSTONE
- SURFACE WATER FEATURE EPHEMERAL INSIDE THE TRENCH
- 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

REFERENCE(S)
 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(S)
 1. VERTICAL TO HORIZONTAL SCALE RATIO IS 2.5:1 WELLS ARE PROJECT NORMAL INTO THE STRIKE OF THE CROSS-SECTION A-A'

CLIENT
 LANDSBURG PLP GROUP

PROJECT
 LANDSBURG MINE SITE

CONSULTANT	YYYY-MM-DD	2023-05-08
	DESIGNED	AP
	PREPARED	TR
	REVIEWED	GZ
	APPROVED	GZ

TITLE
 CROSS-SECTION ALONG STRIKE AT COAL SEAM MARCH 20, 2023
 CROSS-SECTION A-A'

PROJECT NO.	PHASE	REV.	FIGURE
GL9231000007	2021	A	2

1" IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

APPENDIX A

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



TECHNICAL MEMORANDUM

DATE May 22, 2023

Project No. GL923-1000-007.2021

TO Bill Kombol
Palmer Coking Coal Company

FROM Gary Zimmerman (WSP)

EMAIL gary.zimmerman@wsp.com

LANDSBURG MINE SITE MARCH 2023 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 March 20, 21, and 22, 2023 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 WSP. 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-8461 Method 8260D, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- Semivolatile Organic Compounds (SVOCs) by GC/MS, including 1,4-Dioxane following USEPA SW-846 Method 8270E.
- Low-Level Polychlorinated Biphenyls (PCBs) following USEPA SW-846 Method 8082A, Polychlorinated Biphenyls (PCBs) by Gas Chromatography
- Organochlorine Pesticides following USEPA SW-846 Method 8081B, Organochlorine Pesticides by Gas Chromatography
- 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

¹ USEPA. 2020. Test methods for evaluating solid waste, physical/chemical methods (SW-846): 3rd edition, and subsequent updates, Environmental Protection Agency, National Center for Environmental Publications, Cincinnati, Ohio, accessed at URL <http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm>

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 2020a²) and Inorganic Review (USEPA 2020b³), modified to include method specific 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.
- B The analyte was not detected in the method blank.

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

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.

■ Evaluation of detection limits

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

Overall, the data review showed that data are acceptable for use, except for 2-chloroethyl vinyl ether. The MS/MSD results were non-detect and the calculated percent recovery of the associated MS/MSD did not recover. Following Guidelines and using professional judgment, the results for 2-chloroethyl vinyl ether were rejected (R) in LMW-4. 2-chloroethyl vinyl ether was not detected during the March 2023 sampling round and has never been detected at the Site. Other minor data qualifiers were also reported as detailed in Attachment B.

The laboratory analyzed 2-chloroethyl vinyl ether, acrolein, and acrylonitrile from the preserved volatile organic analysis (VOA) vials. Due to the acid-labile nature of analytes 2-chloroethyl vinyl ether, acrolein and acrylonitrile, when samples were collected in acid-preserved vials but all associated LCS/LCSDs were within or above QC criteria, the associated non-detect results for these three analytes were qualified as estimated (UJ) due to possible acid degradation, except for 2-chloroethyl vinyl ether, the results for which were rejected in LMW-4 as noted above. 2-chloroethyl vinyl ether, acrolein, and acrylonitrile were not detected during the March 2023 sampling round and have never been detected at the Site.

The Field Blank and one of the two Trip Blanks contained dibutyl phthalate and acetone, respectively, which are common laboratory contaminants. Neither dibutyl phthalate nor acetone were detected at any of the Site wells. Associated detected results were qualified as “U” at the reporting limit as detailed in Attachment B.

Qualifier Summary Table (Table 2) is included with the qualifiers applied. For details about the data validation, refer to the data validation checklist in Attachment A. The following bulleted items highlight comments and/or qualifications to specific parameters:

- A data completeness of 99% was achieved, which exceeds the QAPP stipulated completeness goal of 90%.

Attachments

Attachment A Tables

Table 1: Sample Collection and Analysis Summary Landsburg Mine Water Sampling Investigation March 2023

Table 2: Qualifier Summary Table Landsburg Mine Water Sampling Investigation March 2023

Table 3: MS/MSD Recoveries

Table 4: LCS/LCSD Recoveries

Attachment B Level 2A Data Validation Checklist

ATTACHMENT A

Tables

**Table 1: Sample Collection and Analysis Summary
Q1 - March 2023**

SDG	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses/Parameters								
						VOCs by 8260D	1,4-Dioxane by 8270E-SIM	NWTPH HCID	TPH-DX+TPH-GX	PCBs by 8082A	Organochlorine Pesticides by 8081B	SVOCs by 8270E	Total Priority Pollutant Metals	
23C0512	LMW-2-0323	3/20/2023 9:55	23C0512-01	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-2-0323-D	3/20/2023 10:05	23C0512-02	GW	FD (LMW-2-0323)	X	X	X	X	X	X	X	X	
23C0512	LMW-12-0323	3/20/2023 11:50	23C0512-03	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-13R-0323	3/20/2023 13:00	23C0512-04	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-10-0323	3/20/2023 14:45	23C0512-05	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-4-0323	3/20/2023 15:50	23C0512-06	GW	MS/MSD	X	X	X	X	X	X	X	X	
23C0512	LMW-6-0323	3/21/2023 9:10	23C0512-07	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-14-0323	3/21/2023 10:30	23C0512-08	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-15-0323	3/21/2023 11:55	23C0512-09	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-11-0323	3/21/2023 13:10	23C0512-10	GW	-	X	X	X	X	X	X	X	X	
23C0512	LMW-7-0323	3/21/2023 15:08	23C0512-11	GW	-	X	X	X	X	X	X	X	X	
23C0512	Trip Blank	-	23C0512-12	WQ	TB	X	X	X	X	X	X	X	-	
23C0539	LMW-9-0223	3/22/2023 10:15	23C0539-01	GW	-	X	X	X	X	X	X	X	X	
23C0539	LMW-3-0223	3/22/2023 11:48	23C0539-02	GW	-	X	X	X	X	X	X	X	X	
23C0539	LMW-5-0323	3/22/2023 13:20	23C0539-03	GW	-	X	X	X	X	X	X	X	X	
23C0539	LMW-8-0323	3/22/2023 14:30	23C0539-04	GW	-	X	X	X	X	X	X	X	X	
23C0539	LMW-FB-0223	3/22/2023 14:45	23C0539-05	GW	FB	X	X	X	X	X	X	X	X	
23C0539	Trip Blank	-	23C0539-06	WQ	TB	X	-	-	-	-	-	-	-	

Notes:

All analyses performed by Analytical Resources, Incorporated (ARI), Tukwila WA.
 Samples collected for TPH-DX and GX were placed on hold.
 MS/MSD was not collected for TPH-DX and HX

Abbreviations:

GW: Groundwater
 WQ: Water quality
 VOCs: Volatile Organic Compounds
 SIM: Selective Ion Monitoring
 NWTPH: Northwest Total Petroleum Hydrocarbons
 HCID: Hydrocarbon Identification
 MS/MSD: Matrix Spike/Matrix Spike Duplicate
 FB: Field Blank
 TB: Trip Blank
 FD: Field Duplicate
 SDG: Sample Delivery Group



**Table 2: Qualifier Summary Table
Annual Groundwater Sampling - March 2023**

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
23C0512	LMW-4-0323	2-chloroethyl vinyl ether	--	--	--	R	MS/MSD %R below lower control limit (not recovered); Improper sample preservation
23C0539	LMW-5-0323	Acetone	--	5.45	5.45	U	Trip Blank Contamination
23C0512	LMW-2-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-2-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-2-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-2-0323-D	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-2-0323-D	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-2-0323-D	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-12-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-12-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-12-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-13R-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-13R-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-13R-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-10-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-10-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-10-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-4-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-4-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-6-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-6-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-6-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-14-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-14-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-14-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-15-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-15-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-15-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-11-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-11-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-11-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0512	LMW-7-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0512	LMW-7-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0512	LMW-7-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0539	LMW-9-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0539	LMW-9-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0539	LMW-9-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0539	LMW-3-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0539	LMW-3-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation

**Table 2: Qualifier Summary Table
Annual Groundwater Sampling - March 2023**

SDG	Sample Name	Constituent	New Result	New MDL	New RL	Qualifier	Reason
23C0539	LMW-3-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0539	LMW-5-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0539	LMW-5-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0539	LMW-5-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
23C0539	LMW-8-0323	Acrolein	--	--	--	UJ	Improper sample preservation
23C0539	LMW-8-0323	Acrylonitrile	--	--	--	UJ	Improper sample preservation
23C0539	LMW-8-0323	2-Chloroethyl vinyl ether	--	--	--	UJ	Improper sample preservation
All SDGs	All Samples	All Results	--	--	--	--	Laboratory applied U-qualifiers are retained unless other qualifications are indicated in this table. All other laboratory qualifiers are removed.

Abbreviations

MDL - Method Detection Limit
 MS - Matrix Spike
 MSD - Matrix Spike Duplicate
 RL - Reporting Limit
 SDG - Sample Delivery Group
 %R - Percent Recovery

Qualifier Definitions

UJ: Non-Detect Result, RL is estimated
 U: Not detected above sample concentration
 R: Result is rejected and considered unusable

May 2023

**Table 3: MS/MSD Recoveries
Q1 Groundwater Sampling**

SDG	Sample Name	Parameter	Analyte	MS/MSD% R	RPD	%R/RPD Criteria	Sample>4x spike value
23C0512	BLC0619-MS1	8260D	1,1,1-trichloroethane	125/119	4.31	79-123/30	No
23C0512	BLC0619-MS1	8260D	2-chloroethyl vinyl ether	0/0	0	64-120/30	No
23C0512	BLC0619-MS1	8260D	1,2-dibromoethane	127/116	9.05	80-121/30	No
23C0512	BLC0586-MSD1	8270E	Benzoic acid	67.2.5/91.3	30.4	38.2-120/30	No
23C0512	BLC0586-MSD1	8270E	Hexachlorocyclopentadiene	24.3/33.8	32.6	23.3-120/30	No
23C0512	BLC0586-MSD1	8270E	3,3'-dichlorobenzidine	42.4/62.2	37.9	34.1-120/30	No
23C0512	BLD0144-MS1	6010D	Calcium	1.51/52.1	4.37	75-125/20	Yes
23C0512	BLD0144-MS1	6010D	Magnesium	70.1/43.4	3.26	75-125/20	Yes

Abbreviations

MS - Matrix Spike

MSD - Matrix Spike Duplicate

SDG - Sample Delivery Group

%R - Percent Recovery

May 2023

**Table 4: LCS/LCSD Recoveries
Q1 Groundwater Sampling**

SDG	Sample Name	Parameter	Analyte	LCS/LCSD% R	RPD	%R/RPD Criteria
23C0539	BLC0641-BS-1 BLC0641-BSD-1	8260D	1,1,1-trichloroethane	126/ 134	6.5	79 – 123/30
23C0539	BLC0641-BSD-1	8260D	Carbon Disulfide	118/ 126	6.4	78-125/30
23C0539	BLC0641-BSD-1	8260D	Chloroform	116/ 123	5.83	80-122/30
23C0539	BLC0641-BSD-1	8260D	Bromodichloromethane	117/ 124	5.68	80-121/30
23C0539	BLC0641-BSD-1	8260D	cis-1,3-dichloropropene	117/ 126	7.17	80-124/30
23C0539	BLC0641-BSD-1	8260D	1,2-dibromoethane	113/ 124	9.13	80-121/30

Abbreviations

MS - Matrix Spike

MSD - Matrix Spike Duplicate

SDG - Sample Delivery Group

%R - Percent Recovery

ATTACHMENT B

Level 2A Data Validation Checklist

QA LEVEL 2A - DATA VERIFICATION/DATA VALIDATION CHECKLIST

Project Name: Landsburg Groundwater

Project Number/Phase/Task: GL9231000007 2021

Reviewing Company: WSP

Project Manager: Gary Zimmerman

Data Evaluator: Dana Shaw

Data Evaluation Date: May 5, 2023

Checked by: Michael Shadle

Review Date: May 16, 2023

Laboratory: Analytical Resources, Inc., Tukwila, WA

Lab SDG #: 23C0512, 23C0539

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		See Note 1
b) COC documents release of custody (signed and dated)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
c) Field QC types provided (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	FB, FD, TB, MS/MSD; See Table 1
d) Did the cooler contents match the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
e) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		See Note 3
f) Were cooler temperatures within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Note 2

Data Package Information	YES	NO	NA	COMMENT
a) Laboratory name and location documented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
b) All samples on COC reported in data package?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
c) Requested analytical methods used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Note 4
d) Requested sample preparation methods used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e) Requested analyte list reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
f) Requested units reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g) Did the laboratory define the qualifiers used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
h) Data package contains all information necessary to complete the data quality review?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Analytical Assessment	YES	NO	NA	COMMENT
a) Solid samples reported on a dry-weight basis?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Were solid samples percent moisture criteria acceptable?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
d) Were detected concentrations less than the QL qualified by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
e) Were detected concentrations above the calibration range reported by the laboratory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Analytical Assessment	YES	NO	NA	COMMENT
a) Did the laboratory satisfy the requested sensitivity requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Laboratory Case Narrative	YES	NO	NA	COMMENT
a) Do the laboratory narrative or laboratory qualifiers indicate deficiencies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were all deficiencies noted in the laboratory qualifiers or narrative?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sample Preservation and Holding Time	YES	NO	NA	COMMENT
a) Were samples properly preserved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See note 2 and 3
b) Were holding times met for sample preparation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Were holding times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Blanks	YES	NO	NA	COMMENTS
a) Were blanks analyzed at the appropriate frequency?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
b) Were any analytes detected in the associated preparation/method blank?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		See Note 5
c) Were any analytes detected in the associated trip blanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Note 6
d) Were any analytes detected in the associated field or equipment/rinsate blanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Note 6
e) Were any analytes detected in the associated storage blanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Surrogates or Deuterated Monitoring Compounds	YES	NO	NA	COMMENTS
a) Were the correct surrogate compounds added to each sample?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were surrogate recoveries within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Note 8
c) If not, were samples analyzed at dilution factors of 20x or greater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
LCS/LCSD	YES	NO	NA	COMMENTS
a) Were LCS/LCSD reported at the appropriate frequency?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
b) Were proper analytes included in the LCS/LCSD?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
c) Were LCS/LCSD recoveries within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>		See Table 4 and Note 9
d) Were RPD values within control limits (if LCSD was analyzed)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MS/MSDs	YES	NO	NA	COMMENTS
a) Were project-specific MS (and MSD) reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		LMW-4-0323
b) Were proper analytes reported in the MS/MSD?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Were project-specific MS/MSD recoveries within control limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Table 3 and Note 10

MS/MSDs	YES	NO	NA	COMMENTS
a) If not, were sample concentrations greater than 4x the spiking concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Table 3
b) Was the RPD or absolute difference within control limits (if project-specific MSD analyzed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Table 3
c) Were project-specific post-digestion spikes analyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were project-specific post-digestion spike recoveries within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were project-specific laboratory duplicates reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Was laboratory duplicate RPD or absolute difference criteria acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Were field duplicates reported?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LMW-2-0323/LMW-2-0323-D
d) Was field duplicate RPD or absolute difference criteria acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ICP Serial Dilution (SD)	YES	NO	NA	COMMENTS
a) Was project-specific ICP SD data provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Were project-specific ICP SD within acceptable criteria?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Overall Evaluation	YES	NO	NA	COMMENTS
a) Were there any other technical problems not previously addressed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were data acceptable and usable, except where noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

1. In SDGs 23C0512 and 23C0539, cooler receipt form states that custody seals were not intact or properly signed and dated. There is no other action but to note.
2. In SDG 23C0539, cooler receipt form states that samples 23C0539-04 (aroclor PCBs, petroleum hydrocarbons, SVOCs, SVOCs SIM, and chlorinated pesticides) and 23C0539-05 (aroclor PCBs) were received out of temperature. Based on professional judgement, data were not qualified.
3. In SDG 23C0539, cooler receipt form states that bubbles were present in 23C0539-02B and 23C0539-03B. There is no indication of the size of the bubbles. Therefore, there is no other action but to note.
4. In SDGs 23C0512 and 23C0539, the COC indicates that TPH-Dx and TPH-Gx were put on hold. The samples were not taken off hold or analyzed. There is no other action but to note.
5. Samples for analysis of 2-chloroethyl vinyl, acrolein, and acrylonitrile were collected in preserved VOA vials and the recoveries were potentially lost due to the acid-labile nature of these compounds. Specifically, acrolein and acrylonitrile need to be preserved in sodium thiosulfate at a pH range between 4 to 5. Following Guidelines and using professional judgement not-detects are qualified as 'UJ'.

6. Analytes were detected in the method blank as shown in the table below. Following Organic Guidelines, when the associated blank concentration was greater than the RL and associated sample results were non-detect, data were not qualified. If the blank is only associated with QC samples, no qualifications are required.

SDG	Blank ID	Method	Analyte	Result	Qualifier	RL	Units
23C0512	BLC0619-BLK1	8260D	Hexachloro-1,3-Butadiene	0.56	-	0.50	ug/L

7. Analytes were detected in the trip blank and field blank, as shown in the table below. Following the Organic Guidelines, when the blank concentration was less than the RL and associated sample results were less than the RL, associated detected results were qualified as "U" at the reporting limit. If the blank is only associated with QC samples, no qualifications are required.

SDG	Blank ID	Method	Analyte	Result	RL	Units
23C0539	TRIP BLANK	8260D	Acetone	5.32	5.00	ug/L
23C0539	FIELD BLANK	8270E	Di-n-butylphthalate	1.1	1.0	ug/L

8. Surrogate recoveries were outside of control limits, as shown in the table below. For SVOCs, data are not qualified when only one of the three surrogates per fraction (acid) was out of control limit. For VOCs, when the surrogate %R is greater than the upper control limit and all associated sample results were non-detect, data were not qualified.

SDG	Sample ID	Method	Analyte	% R	% R Limits
23C0512	LMW-11-0323	8270E	2,4,6-tribromophenol	124	52-120
23C0512	LMW-15-0323	8270E	2,4,6-tribromophenol	132	52-120
23C0539	LMW-3-0323	8270E	2,4,6-tribromophenol	121	52-120
23C0539	LMW-5-0323	8270E	2,4,6-tribromophenol	122	52-120
23C0539	LMW-8-0323	8260D	1,2-dichloroethane-d4	131	80-129
23C0539	LMW-8-0323	8270E	2,4,6-tribromophenol	125	52-120
23C0539	LMW-9-0323	8270E	2,4,6-tribromophenol	137	52-120
23C0539	LMW-FB-0323	8270E	2,4,6-tribromophenol	123	52-120

9. LCS/LCSD recoveries were outside of acceptance criteria for select analytes, as summarized in Table 4. Using professional judgment, when only one QC indicator (LCS/LCSD/RPD) did not meet QC criteria, qualification was not required. Following Guidelines and using professional judgement, when the LCS/LCSD criteria is below the QC criteria, associated non-detect results are qualified (UJ).
10. MS/MSD recoveries were outside of acceptance criteria for select analytes as summarized in Table 3. Using professional judgment, when only one QC indicator (MS/MSD/RPD) did not meet QC criteria, qualification was not required. If the parent sample concentration was four times greater than the spiking concentration, no qualification was required.

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

did not recover, the associated non-detect results were rejected (R). When the MS/MSD recoveries were less than the lower acceptance limit, the non-detect result in the parent sample was qualified as estimated (UJ).

Data qualification: See Table 2.

APPENDIX B

Laboratory Analytical Report



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

03 May 2023

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

RE: Landsburg (GL9231000007.2021)

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

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

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

Associated Work Order(s)
23C0512

Associated SDG ID(s)
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 enclosed 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.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 250512	Turn-around Requested: Standard	Date: 3/21/23
ARI Client Company: Golder	Phone: 425-883-0777	Page: 1 of 2
Client Contact: Gary Zimmerman/Autumn Pearson		No. of Coolers: 1
		Cooler Temps:



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

Client Project Name: Landsburg 2023-03 Sampling					Analysis Requested								Notes/Comments
Client Project #: GL9231000007.2021		Samplers: AP+SJ			VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-DX + TPH-GX (HOLD)	PCBs (8082A)	Organochlorine Pesticides (8081B)	SVOCs (8270E)	Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD
Sample ID	Date	Time	Matrix	No. Containers									
LMW-2-0323	3/20/23	9:55	W	18	X	X	X	X	X	X	X		
LMW-2-0323-D	3/20/23	10:05	W	18	X	X	X	X	X	X	X		
LMW-12-0323	3/20/23	11:50	W	18	X	X	X	X	X	X	X		
LMW-13R-0323	3/20/23	13:00	W	18	X	X	X	X	X	X	X		
LMW-10-0323	3/20/23	14:45	W	18	X	X	X	X	X	X	X		
LMW-4-0323	3/20/23	15:50	W	46	X	X	X	X	X	X	X	MS+MSD Collected	
LMW-6-0323	3/21/23	09:10	W	18	X	X	X	X	X	X	X		
LMW-14-0323	3/21/23	10:30	W	18	X	X	X	X	X	X	X		
LMW-15-0323	3/21/23	11:55	W	18	X	X	X	X	X	X	X		
LMW-11-0323	3/21/23	13:10	W	18	X	X	X	X	X	X	X		
Comments/Special Instructions HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List	Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) <i>[Signature]</i>			Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) <i>[Signature]</i>					
	Printed Name: SEAN JOHNSON		Printed Name: Rowan N.			Printed Name:		Printed Name:					
	Company: WSP		Company: ARI			Company:		Company:					
	Date & Time: 3/21/23 16:45		Date & Time: 3/21/23 1645			Date & Time:		Date & Time:					

(except for -GX & -DX)

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

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 230512	Turn-around Requested: Standard	Date: 3/21/23
ARI Client Company: Golder	Phone: 425-883-0777	Page: 2 of 2
Client Contact: Gary Zimmerman/Autumn Pearson		No. of Coolers: _____ Cooler Temps: _____



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

Client Project Name: Landsburg 2023-03 Sampling					Analysis Requested								Notes/Comments Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD
Client Project #: GL9231000007.2021		Samplers: AP+SJ			VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-DX + TPH-Gx (HOLD)	PCBs (8082A)	Organochlorine Pesticides (8081B)	SVOCs (8270E)	
Sample ID	Date	Time	Matrix	No. Containers									
LMW-7-0323	3/21/23	15:08	W	18	X	X	X	X	X	X	X	X	
TRIP BLANK	---	---	W	3	X								
Comments/Special Instructions HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List					Relinquished by: (Signature) <i>[Signature]</i> Printed Name: SEAN JOHNSON Company: WSP Date & Time: 3/21/23 16:45		Received by: (Signature) <i>[Signature]</i> Printed Name: Ronan Company: ARI Date & Time: 3/21/23 1645		Relinquished by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____		Received by: (Signature) _____ Printed Name: _____ Company: _____ Date & Time: _____		

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

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-2-0323	23C0512-01	Water	20-Mar-2023 09:55	21-Mar-2023 16:45
LMW-2-0323-D	23C0512-02	Water	20-Mar-2023 10:05	21-Mar-2023 16:45
LMW-12-0323	23C0512-03	Water	20-Mar-2023 11:50	21-Mar-2023 16:45
LMW-13R-0323	23C0512-04	Water	20-Mar-2023 13:00	21-Mar-2023 16:45
LMW-10-0323	23C0512-05	Water	20-Mar-2023 14:45	21-Mar-2023 16:45
LMW-4-0323	23C0512-06	Water	20-Mar-2023 15:50	21-Mar-2023 16:45
LMW-6-0323	23C0512-07	Water	21-Mar-2023 09:10	21-Mar-2023 16:45
LMW-14-0323	23C0512-08	Water	21-Mar-2023 10:30	21-Mar-2023 16:45
LMW-15-0323	23C0512-09	Water	21-Mar-2023 11:55	21-Mar-2023 16:45
LMW-11-0323	23C0512-10	Water	21-Mar-2023 13:10	21-Mar-2023 16:45
LMW-7-0323	23C0512-11	Water	21-Mar-2023 15:08	21-Mar-2023 16:45
Trip Blank	23C0512-12	Water	20-Mar-2023 09:55	21-Mar-2023 16:45



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Work Order Case Narrative

Pesticides - EPA Method SW8081B

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

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

PCB Aroclors - EPA Method SW8082A

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

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

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" qualifier.

Internal standard areas were within limits.



Golder Associates

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Redmond WA, 98052-3333

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Project Number: GL9231000007.2021

Project Manager: Gary Zimmerman

Reported:

03-May-2023 08:28

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" qualifier.

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

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

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and 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 high in the CCAL and hexachlorocyclopentadiene is out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

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

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

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

1,4-Dioxane- EPA Method SW8270E

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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



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Project: Landsburg

Project Number: GL9231000007.2021

Project Manager: Gary Zimmerman

Reported:

03-May-2023 08:28

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

Total Metals - EPA Method 200.8, 6010 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.



WORK ORDER

23C0512

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: GL9231000007.2021

Preservation Confirmation

Container ID	Container Type	pH
23C0512-01 A	Glass NM, Amber, 1000 mL	
23C0512-01 B	Glass NM, Amber, 1000 mL	
23C0512-01 C	Glass NM, Amber, 1000 mL	
23C0512-01 D	Glass NM, Amber, 1000 mL	
23C0512-01 E	Glass NM, Amber, 1000 mL	
23C0512-01 F	Glass NM, Amber, 1000 mL	
23C0512-01 G	Glass NM, Amber, 500 mL	
23C0512-01 H	Glass NM, Amber, 500 mL	
23C0512-01 I	Glass NM, Amber, 500 mL	
23C0512-01 J	Glass NM, Amber, 500 mL	
23C0512-01 K	Glass NM, Amber, 500 mL	
23C0512-01 L	Glass NM, Amber, 500 mL	
23C0512-01 M	HDPE NM, 500 mL, 1:1 HNO3	LZ PASS (P)
23C0512-01 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-01 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-01 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-01 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-01 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-02 A	Glass NM, Amber, 1000 mL	
23C0512-02 B	Glass NM, Amber, 1000 mL	
23C0512-02 C	Glass NM, Amber, 1000 mL	
23C0512-02 D	Glass NM, Amber, 1000 mL	
23C0512-02 E	Glass NM, Amber, 1000 mL	
23C0512-02 F	Glass NM, Amber, 1000 mL	
23C0512-02 G	Glass NM, Amber, 500 mL	
23C0512-02 H	Glass NM, Amber, 500 mL	
23C0512-02 I	Glass NM, Amber, 500 mL	
23C0512-02 J	Glass NM, Amber, 500 mL	
23C0512-02 K	Glass NM, Amber, 500 mL	
23C0512-02 L	Glass NM, Amber, 500 mL	
23C0512-02 M	HDPE NM, 500 mL, 1:1 HNO3	LZ P
23C0512-02 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-02 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-02 P	VOA Vial, Clear, 40 mL, HCL	



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-02 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-02 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-03 A	Glass NM, Amber, 1000 mL	
23C0512-03 B	Glass NM, Amber, 1000 mL	
23C0512-03 C	Glass NM, Amber, 1000 mL	
23C0512-03 D	Glass NM, Amber, 1000 mL	
23C0512-03 E	Glass NM, Amber, 1000 mL	
23C0512-03 F	Glass NM, Amber, 1000 mL	
23C0512-03 G	Glass NM, Amber, 500 mL	
23C0512-03 H	Glass NM, Amber, 500 mL	
23C0512-03 I	Glass NM, Amber, 500 mL	
23C0512-03 J	Glass NM, Amber, 500 mL	
23C0512-03 K	Glass NM, Amber, 500 mL	
23C0512-03 L	Glass NM, Amber, 500 mL	
23C0512-03 M	HDPE NM, 500 mL, 1:1 HNO3	LL P
23C0512-03 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-03 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-03 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-03 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-03 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-04 A	Glass NM, Amber, 1000 mL	
23C0512-04 B	Glass NM, Amber, 1000 mL	
23C0512-04 C	Glass NM, Amber, 1000 mL	
23C0512-04 D	Glass NM, Amber, 1000 mL	
23C0512-04 E	Glass NM, Amber, 1000 mL	
23C0512-04 F	Glass NM, Amber, 1000 mL	
23C0512-04 G	Glass NM, Amber, 500 mL	
23C0512-04 H	Glass NM, Amber, 500 mL	
23C0512-04 I	Glass NM, Amber, 500 mL	
23C0512-04 J	Glass NM, Amber, 500 mL	
23C0512-04 K	Glass NM, Amber, 500 mL	
23C0512-04 L	Glass NM, Amber, 500 mL	
23C0512-04 M	HDPE NM, 500 mL, 1:1 HNO3	LL P
23C0512-04 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-04 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-04 P	VOA Vial, Clear, 40 mL, HCL	



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-04 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-04 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-05 A	Glass NM, Amber, 1000 mL	
23C0512-05 B	Glass NM, Amber, 1000 mL	
23C0512-05 C	Glass NM, Amber, 1000 mL	
23C0512-05 D	Glass NM, Amber, 1000 mL	
23C0512-05 E	Glass NM, Amber, 1000 mL	
23C0512-05 F	Glass NM, Amber, 1000 mL	
23C0512-05 G	Glass NM, Amber, 500 mL	
23C0512-05 H	Glass NM, Amber, 500 mL	
23C0512-05 I	Glass NM, Amber, 500 mL	
23C0512-05 J	Glass NM, Amber, 500 mL	
23C0512-05 K	Glass NM, Amber, 500 mL	
23C0512-05 L	Glass NM, Amber, 500 mL	
23C0512-05 M	HDPE NM, 500 mL, 1:1 HNO3	CZ P
23C0512-05 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-05 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-05 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-05 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-05 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-06 A	VOA Vial, Clear, 40 mL, HCL	
23C0512-06 AA	Glass NM, Amber, 1000 mL	
23C0512-06 AB	Glass NM, Amber, 1000 mL	
23C0512-06 AC	Glass NM, Amber, 1000 mL	
23C0512-06 AD	Glass NM, Amber, 500 mL	
23C0512-06 AE	Glass NM, Amber, 500 mL	
23C0512-06 AF	Glass NM, Amber, 500 mL	
23C0512-06 AG	Glass NM, Amber, 500 mL	
23C0512-06 AH	Glass NM, Amber, 500 mL	
23C0512-06 AI	Glass NM, Amber, 500 mL	
23C0512-06 AJ	Glass NM, Amber, 500 mL	
23C0512-06 AK	Glass NM, Amber, 500 mL	
23C0512-06 AL	Glass NM, Amber, 500 mL	
23C0512-06 AM	Glass NM, Amber, 500 mL	
23C0512-06 AN	Glass NM, Amber, 500 mL	
23C0512-06 AO	Glass NM, Amber, 500 mL	



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-06 AP	Glass NM, Amber, 500 mL		
23C0512-06 AQ	Glass NM, Amber, 500 mL		
23C0512-06 AR	HDPE NM, 500 mL, 1:1 HNO3	LZ	P
23C0512-06 AS	HDPE NM, 500 mL, 1:1 HNO3	LZ	P
23C0512-06 AT	HDPE NM, 500 mL, 1:1 HNO3	LZ	P
23C0512-06 B	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 C	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 D	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 E	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 F	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 G	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 H	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 I	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 J	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 K	VOA Vial, Clear, 40 mL, HCL		
23C0512-06 L	Glass NM, Amber, 1000 mL		
23C0512-06 M	Glass NM, Amber, 1000 mL		
23C0512-06 N	Glass NM, Amber, 1000 mL		
23C0512-06 O	Glass NM, Amber, 1000 mL		
23C0512-06 P	Glass NM, Amber, 1000 mL		
23C0512-06 Q	Glass NM, Amber, 1000 mL		
23C0512-06 R	Glass NM, Amber, 1000 mL		
23C0512-06 S	Glass NM, Amber, 1000 mL		
23C0512-06 T	Glass NM, Amber, 1000 mL		
23C0512-06 U	Glass NM, Amber, 1000 mL		
23C0512-06 V	Glass NM, Amber, 1000 mL		
23C0512-06 W	Glass NM, Amber, 1000 mL		
23C0512-06 X	Glass NM, Amber, 1000 mL		
23C0512-06 Y	Glass NM, Amber, 1000 mL		
23C0512-06 Z	Glass NM, Amber, 1000 mL		
23C0512-07 A	Glass NM, Amber, 1000 mL		
23C0512-07 B	Glass NM, Amber, 1000 mL		
23C0512-07 C	Glass NM, Amber, 1000 mL		
23C0512-07 D	Glass NM, Amber, 1000 mL		
23C0512-07 E	Glass NM, Amber, 1000 mL		
23C0512-07 F	Glass NM, Amber, 1000 mL		



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-07 G	Glass NM, Amber, 500 mL	
23C0512-07 H	Glass NM, Amber, 500 mL	
23C0512-07 I	Glass NM, Amber, 500 mL	
23C0512-07 J	Glass NM, Amber, 500 mL	
23C0512-07 K	Glass NM, Amber, 500 mL	
23C0512-07 L	Glass NM, Amber, 500 mL	
23C0512-07 M	HDPE NM, 500 mL, 1:1 HNO ₃	cz P
23C0512-07 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-07 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-07 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-07 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-07 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-08 A	Glass NM, Amber, 1000 mL	
23C0512-08 B	Glass NM, Amber, 1000 mL	
23C0512-08 C	Glass NM, Amber, 1000 mL	
23C0512-08 D	Glass NM, Amber, 1000 mL	
23C0512-08 E	Glass NM, Amber, 1000 mL	
23C0512-08 F	Glass NM, Amber, 1000 mL	
23C0512-08 G	Glass NM, Amber, 500 mL	
23C0512-08 H	Glass NM, Amber, 500 mL	
23C0512-08 I	Glass NM, Amber, 500 mL	
23C0512-08 J	Glass NM, Amber, 500 mL	
23C0512-08 K	Glass NM, Amber, 500 mL	
23C0512-08 L	Glass NM, Amber, 500 mL	
23C0512-08 M	HDPE NM, 500 mL, 1:1 HNO ₃	cz P
23C0512-08 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-08 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-08 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-08 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-08 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-09 A	Glass NM, Amber, 1000 mL	
23C0512-09 B	Glass NM, Amber, 1000 mL	
23C0512-09 C	Glass NM, Amber, 1000 mL	
23C0512-09 D	Glass NM, Amber, 1000 mL	
23C0512-09 E	Glass NM, Amber, 1000 mL	
23C0512-09 F	Glass NM, Amber, 1000 mL	



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-09 G	Glass NM, Amber, 500 mL	
23C0512-09 H	Glass NM, Amber, 500 mL	
23C0512-09 I	Glass NM, Amber, 500 mL	
23C0512-09 J	Glass NM, Amber, 500 mL	
23C0512-09 K	Glass NM, Amber, 500 mL	
23C0512-09 L	Glass NM, Amber, 500 mL	
23C0512-09 M	HDPE NM, 500 mL, 1:1 HNO3	CZ P
23C0512-09 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-09 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-09 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-09 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-09 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-10 A	Glass NM, Amber, 1000 mL	
23C0512-10 B	Glass NM, Amber, 1000 mL	
23C0512-10 C	Glass NM, Amber, 1000 mL	
23C0512-10 D	Glass NM, Amber, 1000 mL	
23C0512-10 E	Glass NM, Amber, 1000 mL	
23C0512-10 F	Glass NM, Amber, 1000 mL	
23C0512-10 G	Glass NM, Amber, 500 mL	
23C0512-10 H	Glass NM, Amber, 500 mL	
23C0512-10 I	Glass NM, Amber, 500 mL	
23C0512-10 J	Glass NM, Amber, 500 mL	
23C0512-10 K	Glass NM, Amber, 500 mL	
23C0512-10 L	Glass NM, Amber, 500 mL	
23C0512-10 M	HDPE NM, 500 mL, 1:1 HNO3	CZ P
23C0512-10 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-10 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-10 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-10 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-10 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-11 A	Glass NM, Amber, 1000 mL	
23C0512-11 B	Glass NM, Amber, 1000 mL	
23C0512-11 C	Glass NM, Amber, 1000 mL	
23C0512-11 D	Glass NM, Amber, 1000 mL	
23C0512-11 E	Glass NM, Amber, 1000 mL	
23C0512-11 F	Glass NM, Amber, 1000 mL	



WORK ORDER

23C0512

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: GL9231000007.2021

23C0512-11 G	Glass NM, Amber, 500 mL	
23C0512-11 H	Glass NM, Amber, 500 mL	
23C0512-11 I	Glass NM, Amber, 500 mL	
23C0512-11 J	Glass NM, Amber, 500 mL	
23C0512-11 K	Glass NM, Amber, 500 mL	
23C0512-11 L	Glass NM, Amber, 500 mL	
23C0512-11 M	HDPE NM, 500 mL, 1:1 HNO3	CZ A
23C0512-11 N	VOA Vial, Clear, 40 mL, HCL	
23C0512-11 O	VOA Vial, Clear, 40 mL, HCL	
23C0512-11 P	VOA Vial, Clear, 40 mL, HCL	
23C0512-11 Q	VOA Vial, Clear, 40 mL, HCL	
23C0512-11 R	VOA Vial, Clear, 40 mL, HCL	
23C0512-12 A	VOA Vial, Clear, 40 mL, HCL	
23C0512-12 B	VOA Vial, Clear, 40 mL, HCL	
23C0512-12 C	VOA Vial, Clear, 40 mL, HCL	

PJB

3/22/23

Preservation Confirmed By _____

Date _____



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-2-0323
23C0512-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 09:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-01 O

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



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-2-0323
23C0512-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 09:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:01

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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
1,1,1,2-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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-2-0323
23C0512-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 09:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:01

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>107</i>	<i>%</i>	
<i>Surrogate: Toluene-d8</i>			<i>80-120 %</i>	<i>98.8</i>	<i>%</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>80-120 %</i>	<i>93.1</i>	<i>%</i>	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			<i>80-120 %</i>	<i>102</i>	<i>%</i>	



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Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-2-0323
23C0512-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 09:55

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 18:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-01 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
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LMW-2-0323
23C0512-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 09:55

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 18:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	69.1	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	74.3	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	79.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	77.2	%	



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LMW-2-0323
23C0512-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/20/2023 09:55
Instrument: NT6 Analyst: JZ Analyzed: 03/29/2023 18:17

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	78.1	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	81.7	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	105	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	87.5	%	



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LMW-2-0323
23C0512-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 09:55
Instrument: NT6 Analyst: JZ Analyzed: 03/27/2023 21:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-01 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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	
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>79.2</i>	<i>%</i>	



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LMW-2-0323
23C0512-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/20/2023 09:55
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 15:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-01 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	76.7	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	89.2	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-2-0323
23C0512-01 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 09:55
Instrument: ECD6 Analyst: JGR Analyzed: 03/30/2023 22:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-01 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-01 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-01 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	84.1	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	89.7	%
Surrogate: Tetrachlorometaxylene	30-120 %	71.5	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	69.9	%



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LMW-2-0323
23C0512-01 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 09:55
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 10:59

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-01 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-01 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-01 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-01 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	69.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	64.5	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	71.7	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	60.4	%	



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LMW-2-0323
23C0512-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 09:55
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 03:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-01 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

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

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 00:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-01 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U



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LMW-2-0323
23C0512-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 09:55
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 03:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-01 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-2-0323
23C0512-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/20/2023 09:55
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 11:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-01 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	113	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	66.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.222	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.46	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	19.2	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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LMW-2-0323
23C0512-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 09:55
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-01 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-2-0323-D
23C0512-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 10:05

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-02 N

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



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LMW-2-0323-D
23C0512-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 10:05

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:21

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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LMW-2-0323-D
23C0512-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 10:05

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:21

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	108	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	100	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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LMW-2-0323-D
23C0512-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 10:05

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 18:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-02 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-2-0323-D
23C0512-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 10:05

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 18:50

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	66.8	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	69.3	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	75.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	71.8	%	



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LMW-2-0323-D
23C0512-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 10:05

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 18:50

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	72.1	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	75.7	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	95.8	%	Q
Surrogate: p-Terphenyl-d14		28-120 %	79.4	%	



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LMW-2-0323-D
23C0512-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 10:05
Instrument: NT6 Analyst: JZ Analyzed: 03/27/2023 22:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-02 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
1,4-Dioxane	123-91-1	1	0.4	1.8	ug/L	
<i>Surrogate: 1,4-Dioxane-d8</i>			33.6-120 %	77.5	%	



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LMW-2-0323-D
23C0512-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/20/2023 10:05
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 16:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-02 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	79.2	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	89.9	%	



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LMW-2-0323-D
23C0512-02 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 10:05
Instrument: ECD6 Analyst: JGR Analyzed: 03/30/2023 22:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-02 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-02 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-02 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	81.3	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	85.8	%
Surrogate: Tetrachlorometaxylene	30-120 %	70.7	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	76.9	%



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LMW-2-0323-D
23C0512-02 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 10:05
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 11:20

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-02 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-02 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-02 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-02 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	67.3	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	61.5	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	68.8	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	56.5	%	



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LMW-2-0323-D
23C0512-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 10:05
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-02 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

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

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 01:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-02 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U



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LMW-2-0323-D
23C0512-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 10:05
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-02 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-2-0323-D
23C0512-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/20/2023 10:05
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 09:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-02 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	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	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	63.6	mg/L	
Manganese	7439-96-5	1	0.0100	0.217	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.27	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	18.6	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-2-0323-D
23C0512-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 10:05
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-02 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-12-0323
23C0512-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 11:50

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-03 N

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



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LMW-12-0323
23C0512-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 11:50

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 13:41

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



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LMW-12-0323
23C0512-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/20/2023 11:50
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 13:41

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	111	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	100	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	95.3	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	101	%	



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LMW-12-0323
23C0512-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 11:50

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 19:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-03 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-12-0323
23C0512-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 11:50

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 19:24

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	61.2	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	65.9	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	69.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	64.0	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-12-0323
23C0512-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 11:50

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 19:24

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	66.2	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	73.4	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	95.5	%	Q
Surrogate: p-Terphenyl-d14		28-120 %	76.3	%	



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LMW-12-0323
23C0512-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 11:50
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 23:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-03 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>81.1</i>	<i>%</i>	



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LMW-12-0323
23C0512-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID

Sampled: 03/20/2023 11:50

Instrument: FID4 Analyst: JR

Analyzed: 03/27/2023 16:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BLC0582
Prepared: 03/23/2023

Sample Size: 500 mL
Final Volume: 1 mL

Extract ID: 23C0512-03 G 01

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
<i>Surrogate: o-Terphenyl</i>			50-150 %	88.6	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	101	%	



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Reported:
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LMW-12-0323
23C0512-03 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 11:50
Instrument: ECD6 Analyst: JGR Analyzed: 03/30/2023 23:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-03 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-03 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-03 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	87.6	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	84.1	%
Surrogate: Tetrachlorometaxylene	30-120 %	71.9	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	66.6	%



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LMW-12-0323
23C0512-03 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 11:50
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 11:41

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-03 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-03 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-03 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-03 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	60.6	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	64.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	60.2	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	58.8	%	



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LMW-12-0323
23C0512-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 11:50
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-03 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

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

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 01:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-03 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U



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LMW-12-0323
23C0512-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 11:50
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-03 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-12-0323
23C0512-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/20/2023 11:50
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 09:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-03 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	55.2	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	8.15	mg/L	
Magnesium	7439-95-4	1	0.500	30.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.663	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.49	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	6.60	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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LMW-12-0323
23C0512-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 11:50
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-03 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-13R-0323
23C0512-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 13:00

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:02

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-04 N

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



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LMW-13R-0323
23C0512-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 13:00

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:02

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



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Project Manager: Gary Zimmerman

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LMW-13R-0323
23C0512-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 13:00

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:02

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	112	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	100	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	94.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	101	%	



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LMW-13R-0323
23C0512-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 13:00

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 19:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-04 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-13R-0323
23C0512-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 13:00

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 19:57

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	68.6	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	71.6	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	77.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	72.7	%	



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LMW-13R-0323
23C0512-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/20/2023 13:00
Instrument: NT6 Analyst: JZ Analyzed: 03/29/2023 19:57

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	75.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	78.3	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	99.8	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	82.2	%	



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LMW-13R-0323
23C0512-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 13:00
Instrument: NT6 Analyst: JZ Analyzed: 03/27/2023 22:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-04 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>87.9</i>	<i>%</i>	



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LMW-13R-0323
23C0512-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/20/2023 13:00
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 16:57

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-04 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	74.8	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	84.7	%	



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LMW-13R-0323
23C0512-04 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 13:00
Instrument: ECD6 Analyst: JGR Analyzed: 03/30/2023 23:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-04 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-04 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-04 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	80.5	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	87.5	%
Surrogate: Tetrachlorometaxylene	30-120 %	70.2	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	67.8	%



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LMW-13R-0323
23C0512-04 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 13:00
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 12:01

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-04 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-04 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-04 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-04 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	69.9	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	62.9	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	70.2	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	59.4	%	



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LMW-13R-0323
23C0512-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 13:00
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-04 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

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

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 01:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-04 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U



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LMW-13R-0323
23C0512-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 13:00
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:10

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-04 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-13R-0323
23C0512-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 03/20/2023 13:00

Instrument: ICP3 Analyst: DOE

Analyzed: 04/11/2023 09:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BLD0144
Prepared: 04/06/2023

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 23C0512-04 M 02

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	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	0.897	mg/L	
Magnesium	7439-95-4	1	0.500	36.6	mg/L	
Manganese	7439-96-5	1	0.0100	0.0257	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.90	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	74.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-13R-0323
23C0512-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 13:00
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-04 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-10-0323
23C0512-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 14:45

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-05 N

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



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LMW-10-0323
23C0512-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 14:45

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:23

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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LMW-10-0323
23C0512-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/20/2023 14:45
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 14:23

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	111	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	101	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	92.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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LMW-10-0323
23C0512-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 14:45

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 20:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-05 1 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-10-0323
23C0512-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 14:45

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 20:30

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	65.0	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	69.4	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	72.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	70.1	%	



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LMW-10-0323
23C0512-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/20/2023 14:45
Instrument: NT6 Analyst: JZ Analyzed: 03/29/2023 20:30

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	69.4	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	73.3	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	95.4	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	76.3	%	



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LMW-10-0323
23C0512-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 14:45
Instrument: NT6 Analyst: JZ Analyzed: 03/27/2023 23:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-05 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>86.8</i>	<i>%</i>	



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LMW-10-0323
23C0512-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/20/2023 14:45
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 17:17

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-05 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	79.1	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	90.8	%	



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LMW-10-0323
23C0512-05 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 14:45
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 00:52

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-05 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-05 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-05 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	81.6	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	81.6	%
Surrogate: Tetrachlorometaxylene	30-120 %	72.4	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	69.4	%



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LMW-10-0323
23C0512-05 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 14:45
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 12:22

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-05 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-05 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-05 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-05 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	62.4	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	62.1	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	62.4	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	57.5	%	



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LMW-10-0323
23C0512-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 14:45
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-05 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

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

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 01:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-05 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	1	0.00300	ND	mg/L	U



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LMW-10-0323
23C0512-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 14:45
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-05 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-10-0323
23C0512-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 03/20/2023 14:45

Instrument: ICP3 Analyst: DOE

Analyzed: 04/11/2023 09:12

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BLD0144
Prepared: 04/06/2023

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 23C0512-05 M 02

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	6.44	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	2.64	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	1.13	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	50.0	81.8	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-10-0323
23C0512-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 14:45
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-05 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-4-0323
23C0512-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 15:50

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-06 A

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



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Redmond WA, 98052-3333

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-4-0323
23C0512-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 15:50

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 14:44

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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LMW-4-0323
23C0512-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/20/2023 15:50
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 14:44

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	115	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	99.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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LMW-4-0323
23C0512-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 15:50

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 21:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-06 AH 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-4-0323
23C0512-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/20/2023 15:50

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 21:04

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	61.1	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	65.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	70.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	66.8	%	



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LMW-4-0323
23C0512-06 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/20/2023 15:50
Instrument: NT6 Analyst: JZ Analyzed: 03/29/2023 21:04

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	67.2	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	72.4	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	92.0	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	81.7	%	



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LMW-4-0323
23C0512-06 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/20/2023 15:50
Instrument: NT6 Analyst: JZ Analyzed: 03/27/2023 23:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-06 AE 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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	
<i>Surrogate: 1,4-Dioxane-d8</i>			33.6-120 %	77.4	%	



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LMW-4-0323
23C0512-06 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/20/2023 15:50
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 17:36

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-06 AD 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	81.2	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	92.4	%	



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LMW-4-0323
23C0512-06 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/20/2023 15:50
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 01:10

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0587 Prepared: 03/24/2023	Sample Size: 500 mL Final Volume: 5 mL	Extract ID: 23C0512-06 AK 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0237 Cleaned: 28-Mar-2023	Initial Volume: 5 uL Final Volume: 5 uL	Extract ID: 23C0512-06 AK 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0236 Cleaned: 28-Mar-2023	Initial Volume: 5 uL Final Volume: 5 uL	Extract ID: 23C0512-06 AK 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	87.1	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	90.7	%
Surrogate: Tetrachlorometaxylene	30-120 %	68.7	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	68.2	%



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LMW-4-0323
23C0512-06 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/20/2023 15:50
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 12:43

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-06 L 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-06 L 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-06 L 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-06 L 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	68.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	60.1	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	69.3	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	57.3	%	



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LMW-4-0323
23C0512-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/20/2023 15:50
Instrument: ICPMS1 Analyst: MCB Analyzed: 04/26/2023 04:20

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-06 AR 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Thallium	7440-28-0	1	0.00200	ND	mg/L	U

Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 01:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-06 AR 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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



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LMW-4-0323
23C0512-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/20/2023 15:50
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/04/2023 20:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-06 AR 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-4-0323
23C0512-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/20/2023 15:50
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 09:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-06 AR 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	120	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	0.714	mg/L	
Magnesium	7439-95-4	1	0.500	70.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.204	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	3.78	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	22.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-4-0323
23C0512-06 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/20/2023 15:50
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 13:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-06 AT
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-6-0323
23C0512-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 09:10

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-07 R

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



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LMW-6-0323
23C0512-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 09:10

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:04

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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LMW-6-0323
23C0512-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/21/2023 09:10
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 15:04

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	114	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	97.8	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	93.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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LMW-6-0323
23C0512-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 09:10

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 22:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-07 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-6-0323
23C0512-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 09:10

Instrument: NT6 Analyst: JZ

Analyzed: 03/29/2023 22:43

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	58.3	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	60.1	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	64.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	62.2	%	



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LMW-6-0323
23C0512-07 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/21/2023 09:10
Instrument: NT6 Analyst: JZ Analyzed: 03/29/2023 22:43

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	63.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	69.0	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	84.4	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	70.9	%	



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LMW-6-0323
23C0512-07 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/21/2023 09:10
Instrument: NT6 Analyst: JZ Analyzed: 03/28/2023 01:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-07 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>87.5</i>	<i>%</i>	



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LMW-6-0323
23C0512-07 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/21/2023 09:10
Instrument: FID4 Analyst: JR Analyzed: 03/27/2023 17:56

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-07 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	84.9	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	95.8	%	



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LMW-6-0323
23C0512-07 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/21/2023 09:10
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 01:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-07 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-07 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-07 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	85.2	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	91.0	%
Surrogate: Tetrachlorometaxylene	30-120 %	70.3	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	71.6	%



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LMW-6-0323
23C0512-07 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/21/2023 09:10
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 13:46

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-07 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-07 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-07 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-07 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	60.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	58.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	61.0	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	54.0	%	



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LMW-6-0323
23C0512-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/21/2023 09:10
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 02:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-07 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-6-0323
23C0512-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/21/2023 09:10
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-07 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-6-0323
23C0512-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/21/2023 09:10
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 11:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-07 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	25.4	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	1.50	mg/L	
Magnesium	7439-95-4	1	0.500	12.4	mg/L	
Manganese	7439-96-5	1	0.0100	0.0196	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	0.668	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	6.47	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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LMW-6-0323
23C0512-07 (Water)

Metals and Metallic Compounds

Method: EPA 7470A

Sampled: 03/21/2023 09:10

Instrument: HYDRA Analyst: ml

Analyzed: 04/05/2023 14:11

Analysis by: Analytical Resources, LLC

Sample Preparation:

Preparation Method: TWM EPA 7470A

Extract ID: 23C0512-07 M

Preparation Batch: BLC0855

Sample Size: 20 mL

Prepared: 03/31/2023

Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Reported:
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LMW-14-0323
23C0512-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 10:30

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-08 R

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



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LMW-14-0323
23C0512-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 10:30

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:24

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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LMW-14-0323
23C0512-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/21/2023 10:30
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 15:24

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	111	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	100	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	90.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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LMW-14-0323
23C0512-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 10:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 13:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-08 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-14-0323
23C0512-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 10:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 13:35

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	74.2	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	74.0	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	85.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	82.3	%	



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Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-14-0323
23C0512-08 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 10:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 13:35

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	85.1	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	95.4	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	119	%	Q
Surrogate: p-Terphenyl-d14		28-120 %	112	%	



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LMW-14-0323
23C0512-08 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/21/2023 10:30
Instrument: NT6 Analyst: JZ Analyzed: 03/28/2023 01:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-08 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>82.8</i>	<i>%</i>	



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LMW-14-0323
23C0512-08 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/21/2023 10:30
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 11:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-08 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	82.1	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	91.0	%	



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Project Manager: Gary Zimmerman

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LMW-14-0323
23C0512-08 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/21/2023 10:30
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 01:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-08 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-08 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-08 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	82.7	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	88.8	%
Surrogate: Tetrachlorometaxylene	30-120 %	71.8	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	72.8	%



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LMW-14-0323
23C0512-08 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/21/2023 10:30
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 14:07

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-08 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-08 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-08 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-08 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	54.8	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	64.8	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	54.0	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	59.8	%	



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LMW-14-0323
23C0512-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/21/2023 10:30
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 02:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-08 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-14-0323
23C0512-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/21/2023 10:30
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-08 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-14-0323
23C0512-08 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 03/21/2023 10:30

Instrument: ICP3 Analyst: DOE

Analyzed: 04/11/2023 11:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BLD0144
Prepared: 04/06/2023

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 23C0512-08 M 02

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	149	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	10.9	mg/L	
Magnesium	7439-95-4	1	0.500	69.2	mg/L	
Manganese	7439-96-5	1	0.0100	0.637	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	13.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-14-0323
23C0512-08 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/21/2023 10:30
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-08 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-15-0323
23C0512-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 11:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:45

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-09 R

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



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LMW-15-0323
23C0512-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 11:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:45

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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LMW-15-0323
23C0512-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 11:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 15:45

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	116	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.1	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	90.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	106	%	



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LMW-15-0323
23C0512-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 11:55

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 14:08

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-09 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-15-0323
23C0512-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 11:55

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 14:08

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	86.2	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	88.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	98.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	93.3	%	



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LMW-15-0323
23C0512-09 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 11:55

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 14:08

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	96.4	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	105	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	132	%	*, Q
Surrogate: p-Terphenyl-d14		28-120 %	112	%	



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LMW-15-0323
23C0512-09 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/21/2023 11:55
Instrument: NT6 Analyst: JZ Analyzed: 03/28/2023 01:50

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-09 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>80.4</i>	<i>%</i>	



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LMW-15-0323
23C0512-09 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/21/2023 11:55
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 12:09

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-09 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	86.3	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	94.8	%	



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LMW-15-0323
23C0512-09 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/21/2023 11:55
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 02:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-09 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-09 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-09 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	77.8	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	82.3	%
Surrogate: Tetrachlorometaxylene	30-120 %	66.7	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	67.5	%



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LMW-15-0323
23C0512-09 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/21/2023 11:55
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 14:28

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-09 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-09 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-09 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-09 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	70.2	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	63.6	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	71.5	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	59.1	%	



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LMW-15-0323
23C0512-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/21/2023 11:55
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 02:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-09 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-15-0323
23C0512-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/21/2023 11:55
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-09 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00321	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U



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LMW-15-0323
23C0512-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 03/21/2023 11:55

Instrument: ICP3 Analyst: DOE

Analyzed: 04/11/2023 11:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BLD0144
Prepared: 04/06/2023

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 23C0512-09 M 02

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	58.6	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	4.16	mg/L	
Magnesium	7439-95-4	1	0.500	24.0	mg/L	
Manganese	7439-96-5	1	0.0100	0.373	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.86	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	11.7	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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LMW-15-0323
23C0512-09 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/21/2023 11:55
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:16

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-09 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Reported:
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LMW-11-0323
23C0512-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 13:10

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 16:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-10 R

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



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LMW-11-0323
23C0512-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 13:10

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 16:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U



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LMW-11-0323
23C0512-10 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/21/2023 13:10
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 16:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	113	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	99.3	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	91.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	105	%	



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LMW-11-0323
23C0512-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 13:10

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 14:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-10 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-11-0323
23C0512-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 13:10

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 14:41

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	77.7	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	83.4	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	88.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	84.7	%	



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LMW-11-0323
23C0512-10 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/21/2023 13:10
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 14:41

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	86.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	98.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	124	%	* , Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	107	%	



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LMW-11-0323
23C0512-10 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/21/2023 13:10
Instrument: NT6 Analyst: JZ Analyzed: 03/28/2023 02:15

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-10 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>84.9</i>	<i>%</i>	



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LMW-11-0323
23C0512-10 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/21/2023 13:10
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 12:29

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-10 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	90.6	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	98.8	%	



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LMW-11-0323
23C0512-10 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/21/2023 13:10
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 02:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-10 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-10 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-10 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	84.7	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	87.4	%
Surrogate: Tetrachlorometaxylene	30-120 %	73.3	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	68.9	%



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LMW-11-0323
23C0512-10 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/21/2023 13:10
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 14:48

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-10 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-10 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-10 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleaned: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-10 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	65.9	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	59.8	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	65.5	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	53.4	%	



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LMW-11-0323
23C0512-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/21/2023 13:10
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 02:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-10 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-11-0323
23C0512-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/21/2023 13:10
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-10 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.00300	0.00844	mg/L	
Selenium	7782-49-2	1	0.0250	ND	mg/L	U



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LMW-11-0323
23C0512-10 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/21/2023 13:10
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 11:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-10 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	58.5	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	0.507	mg/L	
Magnesium	7439-95-4	1	0.500	24.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.166	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.99	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	22.3	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-11-0323
23C0512-10 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/21/2023 13:10
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-10 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Reported:
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LMW-7-0323
23C0512-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 15:08

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 16:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-11 R

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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

LMW-7-0323
23C0512-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 15:08

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 16:26

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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Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
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LMW-7-0323
23C0512-11 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/21/2023 15:08

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 16:26

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	116	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	100	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	90.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-7-0323
23C0512-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 15:08

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 15:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0586
Prepared: 03/27/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0512-11 I 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-7-0323
23C0512-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/21/2023 15:08

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 15:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	80.3	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	81.2	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	88.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	82.9	%	



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LMW-7-0323
23C0512-11 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/21/2023 15:08
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 15:14

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	86.2	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	93.4	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	115	%	Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	99.4	%	



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LMW-7-0323
23C0512-11 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/21/2023 15:08
Instrument: NT6 Analyst: JZ Analyzed: 03/28/2023 02:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0512-11 H 01
Preparation Batch: BLC0583 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>80.5</i>	<i>%</i>	



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LMW-7-0323
23C0512-11 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/21/2023 15:08
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 12:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-11 G 01
Preparation Batch: BLC0582 Sample Size: 500 mL
Prepared: 03/23/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	91.2	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	100	%	



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Project Manager: Gary Zimmerman

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LMW-7-0323
23C0512-11 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/21/2023 15:08
Instrument: ECD6 Analyst: JGR Analyzed: 03/31/2023 02:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0512-11 J 01
Preparation Batch: BLC0587 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Sample Cleanup: Cleanup Method: Silica Gel Extract ID: 23C0512-11 J 01
Cleanup Batch: CLC0237 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Sample Cleanup: Cleanup Method: Sulfur Extract ID: 23C0512-11 J 01
Cleanup Batch: CLC0236 Initial Volume: 5 uL
Cleaned: 28-Mar-2023 Final Volume: 5 uL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	68.2	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	83.8	%
Surrogate: Tetrachlorometaxylene	30-120 %	73.9	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	68.2	%



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LMW-7-0323
23C0512-11 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/21/2023 15:08
Instrument: ECD7 Analyst: RJL Analyzed: 03/30/2023 15:51

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0588 Prepared: 03/24/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0512-11 A 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0246 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-11 A 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0248 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-11 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0247 Cleansed: 29-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0512-11 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	63.8	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	56.9	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	63.0	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	52.5	%	



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LMW-7-0323
23C0512-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/21/2023 15:08
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 02:54

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-11 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-7-0323
23C0512-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/21/2023 15:08
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:41

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0512-11 M 01
Preparation Batch: BLD0067 Sample Size: 25 mL
Prepared: 04/04/2023 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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LMW-7-0323
23C0512-11 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/21/2023 15:08
Instrument: ICP3 Analyst: DOE Analyzed: 04/11/2023 11:33

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0512-11 M 02
Preparation Batch: BLD0144 Sample Size: 25 mL
Prepared: 04/06/2023 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	55.2	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	1.43	mg/L	
Magnesium	7439-95-4	1	0.500	25.1	mg/L	
Manganese	7439-96-5	1	0.0100	0.155	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.93	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	38.5	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:28
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LMW-7-0323
23C0512-11 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/21/2023 15:08
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:21

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0512-11 M
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Trip Blank
23C0512-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 09:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 12:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0619
Prepared: 03/23/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0512-12 B

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



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Reported:
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Trip Blank
23C0512-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/20/2023 09:55

Instrument: NT2 Analyst: LH

Analyzed: 03/23/2023 12:40

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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Trip Blank
23C0512-12 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/20/2023 09:55
Instrument: NT2 Analyst: LH Analyzed: 03/23/2023 12:40

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	98.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	96.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	101	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0619-BLK1)		Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 12:20								
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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0619-BLK1)		Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 12:20								
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	0.56	0.50	ug/L							
Naphthalene	ND	0.50	ug/L							U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0619-BLK1)				Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 12:20						
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.00		ug/L	5.00		100	80-129			
<i>Surrogate: Toluene-d8</i>	4.97		ug/L	5.00		99.3	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.81		ug/L	5.00		96.2	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.08		ug/L	5.00		102	80-120			
LCS (BLC0619-BS1)				Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:18						
Chloromethane	10.7	0.50	ug/L	10.0		107	60-138			
Vinyl Chloride	10.3	0.10	ug/L	10.0		103	66-133			
Bromomethane	10.4	1.00	ug/L	10.0		104	72-131			
Chloroethane	10.3	0.20	ug/L	10.0		103	60-155			
Trichlorofluoromethane	10.8	0.20	ug/L	10.0		108	62-141			
Acrolein	50.8	5.00	ug/L	50.0		102	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.4	0.20	ug/L	10.0		104	76-129			
Acetone	51.4	5.00	ug/L	50.0		103	58-142			
1,1-Dichloroethene	10.5	0.20	ug/L	10.0		105	69-135			
Iodomethane	10.4	1.00	ug/L	10.0		104	56-147			
Methylene Chloride	10.1	1.00	ug/L	10.0		101	65-135			
Acrylonitrile	10.1	1.00	ug/L	10.0		101	64-134			
Carbon Disulfide	10.9	0.20	ug/L	10.0		109	78-125			
trans-1,2-Dichloroethene	10.1	0.20	ug/L	10.0		101	78-128			
Vinyl Acetate	9.80	0.20	ug/L	10.0		98.0	55-138			
1,1-Dichloroethane	10.3	0.20	ug/L	10.0		103	76-124			
2-Butanone	53.4	5.00	ug/L	50.0		107	61-140			
2,2-Dichloropropane	9.68	0.20	ug/L	10.0		96.8	66-147			
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0		102	80-121			
Chloroform	10.3	0.20	ug/L	10.0		103	80-122			
Bromochloromethane	10.2	0.20	ug/L	10.0		102	80-121			
1,1,1-Trichloroethane	11.3	0.20	ug/L	10.0		113	79-123			
1,1-Dichloropropene	10.4	0.10	ug/L	10.0		104	80-127			
Carbon tetrachloride	8.80	0.20	ug/L	10.0		88.0	53-137			
1,2-Dichloroethane	10.1	0.20	ug/L	10.0		101	75-123			
Benzene	10.6	0.20	ug/L	10.0		106	80-120			
Trichloroethene	10.3	0.20	ug/L	10.0		103	80-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0619-BS1)				Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:18						
1,2-Dichloropropane	10.4	0.20	ug/L	10.0		104	80-120			
Bromodichloromethane	10.8	0.20	ug/L	10.0		108	80-121			
Dibromomethane	10.3	0.20	ug/L	10.0		103	80-120			
2-Chloroethyl vinyl ether	10.4	1.00	ug/L	10.0		104	64-120			
4-Methyl-2-Pentanone	55.0	2.50	ug/L	50.0		110	67-133			
cis-1,3-Dichloropropene	11.3	0.20	ug/L	10.0		113	80-124			
Toluene	10.3	0.20	ug/L	10.0		103	80-120			
trans-1,3-Dichloropropene	9.46	0.20	ug/L	10.0		94.6	71-127			
2-Hexanone	55.5	5.00	ug/L	50.0		111	69-133			
1,1,2-Trichloroethane	10.3	0.20	ug/L	10.0		103	80-121			
1,3-Dichloropropane	10.1	0.10	ug/L	10.0		101	80-120			
Tetrachloroethene	9.91	0.20	ug/L	10.0		99.1	80-120			
Dibromochloromethane	8.53	0.20	ug/L	10.0		85.3	65-135			
1,2-Dibromoethane	11.4	0.10	ug/L	10.0		114	80-121			
Chlorobenzene	10.4	0.20	ug/L	10.0		104	80-120			
Ethylbenzene	10.3	0.20	ug/L	10.0		103	80-120			
1,1,1,2-Tetrachloroethane	8.54	0.20	ug/L	10.0		85.4	80-120			
m,p-Xylene	21.6	0.40	ug/L	20.0		108	80-121			
o-Xylene	10.6	0.20	ug/L	10.0		106	80-121			
Xylenes, total	32.2	0.60	ug/L	30.0		107	76-127			
Styrene	11.2	0.20	ug/L	10.0		112	80-124			
Bromoform	7.63	0.20	ug/L	10.0		76.3	51-134			Q
1,1,2,2-Tetrachloroethane	10.3	0.20	ug/L	10.0		103	77-123			
1,2,3-Trichloropropane	10.3	0.25	ug/L	10.0		103	76-125			
trans-1,4-Dichloro 2-Butene	9.85	1.00	ug/L	10.0		98.5	55-129			
n-Propylbenzene	11.1	0.20	ug/L	10.0		111	78-130			
Bromobenzene	10.2	0.20	ug/L	10.0		102	80-120			
Isopropyl Benzene	11.3	0.20	ug/L	10.0		113	80-128			
2-Chlorotoluene	10.4	0.10	ug/L	10.0		104	78-122			
4-Chlorotoluene	10.5	0.20	ug/L	10.0		105	80-121			
t-Butylbenzene	10.9	0.20	ug/L	10.0		109	78-125			
1,3,5-Trimethylbenzene	11.1	0.20	ug/L	10.0		111	80-129			
1,2,4-Trimethylbenzene	11.0	0.20	ug/L	10.0		110	80-127			
s-Butylbenzene	11.1	0.20	ug/L	10.0		111	78-129			
4-Isopropyl Toluene	11.2	0.20	ug/L	10.0		112	79-130			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0619-BS1)					Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:18					
1,3-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
1,4-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120			
n-Butylbenzene	11.2	0.20	ug/L	10.0		112	74-129			
1,2-Dichlorobenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,2-Dibromo-3-chloropropane	8.25	0.50	ug/L	10.0		82.5	62-123			
1,2,4-Trichlorobenzene	10.8	0.50	ug/L	10.0		108	64-124			
Hexachloro-1,3-Butadiene	11.0	0.50	ug/L	10.0		110	65-145			B
Naphthalene	11.4	0.50	ug/L	10.0		114	50-134			
1,2,3-Trichlorobenzene	10.7	0.50	ug/L	10.0		107	49-133			
Dichlorodifluoromethane	11.0	0.20	ug/L	10.0		110	48-147			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	4.75		ug/L	5.00		95.0	80-129			
<i>Surrogate: Toluene-d8</i>	5.13		ug/L	5.00		103	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.98		ug/L	5.00		99.7	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.00		ug/L	5.00		99.9	80-120			

LCS Dup (BLC0619-BS1)					Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:39					
Chloromethane	10.9	0.50	ug/L	10.0		109	60-138	1.87	30	
Vinyl Chloride	10.5	0.10	ug/L	10.0		105	66-133	2.52	30	
Bromomethane	10.6	1.00	ug/L	10.0		106	72-131	2.07	30	
Chloroethane	10.5	0.20	ug/L	10.0		105	60-155	1.87	30	
Trichlorofluoromethane	11.0	0.20	ug/L	10.0		110	62-141	1.80	30	
Acrolein	54.7	5.00	ug/L	50.0		109	52-190	7.27	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.6	0.20	ug/L	10.0		106	76-129	1.74	30	
Acetone	54.3	5.00	ug/L	50.0		109	58-142	5.65	30	
1,1-Dichloroethene	10.9	0.20	ug/L	10.0		109	69-135	3.65	30	
Iodomethane	10.7	1.00	ug/L	10.0		107	56-147	3.40	30	
Methylene Chloride	10.6	1.00	ug/L	10.0		106	65-135	5.16	30	
Acrylonitrile	10.9	1.00	ug/L	10.0		109	64-134	7.49	30	
Carbon Disulfide	11.1	0.20	ug/L	10.0		111	78-125	1.66	30	
trans-1,2-Dichloroethene	10.5	0.20	ug/L	10.0		105	78-128	3.80	30	
Vinyl Acetate	10.3	0.20	ug/L	10.0		103	55-138	5.21	30	
1,1-Dichloroethane	10.7	0.20	ug/L	10.0		107	76-124	3.88	30	
2-Butanone	56.9	5.00	ug/L	50.0		114	61-140	6.41	30	
2,2-Dichloropropane	9.90	0.20	ug/L	10.0		99.0	66-147	2.23	30	
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121	4.56	30	



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Redmond WA, 98052-3333

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0619-BSD1)				Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:39						
Chloroform	10.8	0.20	ug/L	10.0		108	80-122	4.78	30	
Bromochloromethane	10.6	0.20	ug/L	10.0		106	80-121	4.08	30	
1,1,1-Trichloroethane	11.5	0.20	ug/L	10.0		115	79-123	1.80	30	
1,1-Dichloropropene	10.8	0.10	ug/L	10.0		108	80-127	3.61	30	
Carbon tetrachloride	8.97	0.20	ug/L	10.0		89.7	53-137	1.90	30	
1,2-Dichloroethane	10.5	0.20	ug/L	10.0		105	75-123	3.55	30	
Benzene	11.0	0.20	ug/L	10.0		110	80-120	3.66	30	
Trichloroethene	10.7	0.20	ug/L	10.0		107	80-120	3.92	30	
1,2-Dichloropropane	10.9	0.20	ug/L	10.0		109	80-120	4.14	30	
Bromodichloromethane	11.1	0.20	ug/L	10.0		111	80-121	2.75	30	
Dibromomethane	10.6	0.20	ug/L	10.0		106	80-120	3.07	30	
2-Chloroethyl vinyl ether	10.9	1.00	ug/L	10.0		109	64-120	4.64	30	
4-Methyl-2-Pentanone	57.4	2.50	ug/L	50.0		115	67-133	4.20	30	
cis-1,3-Dichloropropene	11.7	0.20	ug/L	10.0		117	80-124	2.75	30	
Toluene	10.6	0.20	ug/L	10.0		106	80-120	3.18	30	
trans-1,3-Dichloropropene	9.88	0.20	ug/L	10.0		98.8	71-127	4.42	30	
2-Hexanone	58.7	5.00	ug/L	50.0		117	69-133	5.61	30	
1,1,2-Trichloroethane	10.7	0.20	ug/L	10.0		107	80-121	3.54	30	
1,3-Dichloropropane	10.8	0.10	ug/L	10.0		108	80-120	6.15	30	
Tetrachloroethene	10.3	0.20	ug/L	10.0		103	80-120	3.82	30	
Dibromochloromethane	8.90	0.20	ug/L	10.0		89.0	65-135	4.27	30	
1,2-Dibromoethane	11.7	0.10	ug/L	10.0		117	80-121	2.58	30	
Chlorobenzene	10.8	0.20	ug/L	10.0		108	80-120	4.55	30	
Ethylbenzene	10.8	0.20	ug/L	10.0		108	80-120	4.23	30	
1,1,1,2-Tetrachloroethane	8.96	0.20	ug/L	10.0		89.6	80-120	4.83	30	
m,p-Xylene	22.5	0.40	ug/L	20.0		112	80-121	4.04	30	
o-Xylene	11.1	0.20	ug/L	10.0		111	80-121	4.51	30	
Xylenes, total	33.5	0.60	ug/L	30.0		112	76-127	4.19	30	
Styrene	11.6	0.20	ug/L	10.0		116	80-124	3.76	30	
Bromoform	7.95	0.20	ug/L	10.0		79.5	51-134	4.09	30	Q
1,1,1,2,2-Tetrachloroethane	10.8	0.20	ug/L	10.0		108	77-123	4.29	30	
1,2,3-Trichloropropane	10.6	0.25	ug/L	10.0		106	76-125	2.72	30	
trans-1,4-Dichloro 2-Butene	9.90	1.00	ug/L	10.0		99.0	55-129	0.51	30	
n-Propylbenzene	11.3	0.20	ug/L	10.0		113	78-130	1.67	30	
Bromobenzene	10.5	0.20	ug/L	10.0		105	80-120	2.95	30	



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Redmond WA, 98052-3333

Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0619-BSD1)				Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 11:39						
Isopropyl Benzene	11.5	0.20	ug/L	10.0	115	80-128	2.10	30		
2-Chlorotoluene	10.6	0.10	ug/L	10.0	106	78-122	2.69	30		
4-Chlorotoluene	10.7	0.20	ug/L	10.0	107	80-121	1.29	30		
t-Butylbenzene	11.2	0.20	ug/L	10.0	112	78-125	2.82	30		
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0	114	80-129	2.75	30		
1,2,4-Trimethylbenzene	11.2	0.20	ug/L	10.0	112	80-127	2.07	30		
s-Butylbenzene	11.3	0.20	ug/L	10.0	113	78-129	1.75	30		
4-Isopropyl Toluene	11.3	0.20	ug/L	10.0	113	79-130	1.15	30		
1,3-Dichlorobenzene	10.5	0.20	ug/L	10.0	105	80-120	2.33	30		
1,4-Dichlorobenzene	10.4	0.20	ug/L	10.0	104	80-120	2.24	30		
n-Butylbenzene	11.1	0.20	ug/L	10.0	111	74-129	0.81	30		
1,2-Dichlorobenzene	10.4	0.20	ug/L	10.0	104	80-120	3.21	30		
1,2-Dibromo-3-chloropropane	9.20	0.50	ug/L	10.0	92.0	62-123	10.90	30		
1,2,4-Trichlorobenzene	11.0	0.50	ug/L	10.0	110	64-124	2.00	30		
Hexachloro-1,3-Butadiene	10.9	0.50	ug/L	10.0	109	65-145	0.97	30		B
Naphthalene	12.0	0.50	ug/L	10.0	120	50-134	4.68	30		
1,2,3-Trichlorobenzene	10.8	0.50	ug/L	10.0	108	49-133	0.90	30		
Dichlorodifluoromethane	11.1	0.20	ug/L	10.0	111	48-147	0.58	30		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.12		ug/L	5.00	102	80-129				
<i>Surrogate: Toluene-d8</i>	5.04		ug/L	5.00	101	80-120				
<i>Surrogate: 4-Bromofluorobenzene</i>	4.99		ug/L	5.00	99.8	80-120				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	4.92		ug/L	5.00	98.4	80-120				
Matrix Spike (BLC0619-MS1)				Source: 23C0512-06 Prepared: 23-Mar-2023 Analyzed: 23-Mar-2023 19:11						
Chloromethane	12.1	0.50	ug/L	10.0	ND	121	60-138			
Vinyl Chloride	11.3	0.10	ug/L	10.0	ND	113	66-133			
Bromomethane	11.7	1.00	ug/L	10.0	ND	117	72-131			
Chloroethane	11.9	0.20	ug/L	10.0	ND	119	60-155			
Trichlorofluoromethane	12.3	0.20	ug/L	10.0	ND	123	62-141			
Acrolein	53.6	5.00	ug/L	50.0	ND	107	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.7	0.20	ug/L	10.0	ND	117	76-129			
Acetone	70.9	5.00	ug/L	50.0	ND	133	58-142			
1,1-Dichloroethene	12.3	0.20	ug/L	10.0	ND	123	69-135			
Iodomethane	11.6	1.00	ug/L	10.0	ND	116	56-147			
Methylene Chloride	11.6	1.00	ug/L	10.0	ND	116	65-135			



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Redmond WA, 98052-3333

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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLC0619-MS1)										
		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:11				
Acrylonitrile	12.1	1.00	ug/L	10.0	ND	121	64-134			
Carbon Disulfide	12.3	0.20	ug/L	10.0	ND	123	78-125			
trans-1,2-Dichloroethene	11.2	0.20	ug/L	10.0	ND	112	78-128			
Vinyl Acetate	8.02	0.20	ug/L	10.0	ND	80.2	55-138			
1,1-Dichloroethane	11.9	0.20	ug/L	10.0	ND	119	76-124			
2-Butanone	62.3	5.00	ug/L	50.0	ND	125	61-140			
2,2-Dichloropropane	9.46	0.20	ug/L	10.0	ND	94.6	66-147			
cis-1,2-Dichloroethene	11.6	0.20	ug/L	10.0	ND	116	80-121			
Chloroform	12.0	0.20	ug/L	10.0	ND	120	80-122			
Bromochloromethane	11.5	0.20	ug/L	10.0	ND	115	80-121			
1,1,1-Trichloroethane	12.5	0.20	ug/L	10.0	ND	125	79-123			*
1,1-Dichloropropene	11.2	0.10	ug/L	10.0	ND	112	80-127			
Carbon tetrachloride	8.46	0.20	ug/L	10.0	ND	84.6	53-137			
1,2-Dichloroethane	11.8	0.20	ug/L	10.0	ND	118	75-123			
Benzene	11.7	0.20	ug/L	10.0	ND	117	80-120			
Trichloroethene	10.9	0.20	ug/L	10.0	ND	109	80-120			
1,2-Dichloropropane	11.4	0.20	ug/L	10.0	ND	114	80-120			
Bromodichloromethane	11.6	0.20	ug/L	10.0	ND	116	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	62.2	2.50	ug/L	50.0	ND	124	67-133			
cis-1,3-Dichloropropene	11.2	0.20	ug/L	10.0	ND	112	80-124			
Toluene	11.3	0.20	ug/L	10.0	ND	113	80-120			
trans-1,3-Dichloropropene	9.80	0.20	ug/L	10.0	ND	98.0	71-127			
2-Hexanone	59.8	5.00	ug/L	50.0	ND	120	69-133			
1,1,2-Trichloroethane	11.7	0.20	ug/L	10.0	ND	117	80-121			
1,3-Dichloropropane	10.8	0.10	ug/L	10.0	ND	108	80-120			
Tetrachloroethene	10.2	0.20	ug/L	10.0	ND	102	80-120			
Dibromochloromethane	8.10	0.20	ug/L	10.0	ND	81.0	65-135			
1,2-Dibromoethane	12.7	0.10	ug/L	10.0	ND	127	80-121			*
Chlorobenzene	11.0	0.20	ug/L	10.0	ND	110	80-120			
Ethylbenzene	11.0	0.20	ug/L	10.0	ND	110	80-120			
1,1,1,2-Tetrachloroethane	8.46	0.20	ug/L	10.0	ND	84.6	80-120			
m,p-Xylene	23.2	0.40	ug/L	20.0	ND	116	80-121			
o-Xylene	11.4	0.20	ug/L	10.0	ND	114	80-121			



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

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Reported:
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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLC0619-MS1)										
		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:11				
Xylenes, total	34.6	0.60	ug/L	30.0	ND	115	76-127			
Styrene	11.9	0.20	ug/L	10.0	ND	119	80-124			
Bromoform	6.54	0.20	ug/L	10.0	ND	65.4	51-134			Q
1,1,2,2-Tetrachloroethane	10.8	0.20	ug/L	10.0	ND	108	77-123			
1,2,3-Trichloropropane	10.6	0.25	ug/L	10.0	ND	106	76-125			
trans-1,4-Dichloro 2-Butene	8.37	1.00	ug/L	10.0	ND	83.7	55-129			
n-Propylbenzene	11.3	0.20	ug/L	10.0	ND	113	78-130			
Bromobenzene	10.1	0.20	ug/L	10.0	ND	101	80-120			
Isopropyl Benzene	11.3	0.20	ug/L	10.0	ND	113	80-128			
2-Chlorotoluene	10.3	0.10	ug/L	10.0	ND	103	78-122			
4-Chlorotoluene	10.5	0.20	ug/L	10.0	ND	105	80-121			
t-Butylbenzene	10.9	0.20	ug/L	10.0	ND	109	78-125			
1,3,5-Trimethylbenzene	11.3	0.20	ug/L	10.0	ND	113	80-129			
1,2,4-Trimethylbenzene	11.1	0.20	ug/L	10.0	ND	111	80-127			
s-Butylbenzene	11.0	0.20	ug/L	10.0	ND	110	78-129			
4-Isopropyl Toluene	11.0	0.20	ug/L	10.0	ND	110	79-130			
1,3-Dichlorobenzene	10.4	0.20	ug/L	10.0	ND	104	80-120			
1,4-Dichlorobenzene	10.4	0.20	ug/L	10.0	ND	104	80-120			
n-Butylbenzene	10.9	0.20	ug/L	10.0	ND	109	74-129			
1,2-Dichlorobenzene	10.5	0.20	ug/L	10.0	ND	105	80-120			
1,2-Dibromo-3-chloropropane	8.23	0.50	ug/L	10.0	ND	82.3	62-123			
1,2,4-Trichlorobenzene	10.6	0.50	ug/L	10.0	ND	106	64-124			
Hexachloro-1,3-Butadiene	9.47	0.50	ug/L	10.0	ND	94.7	65-145			B
Naphthalene	11.9	0.50	ug/L	10.0	ND	119	50-134			
1,2,3-Trichlorobenzene	10.7	0.50	ug/L	10.0	ND	107	49-133			
Dichlorodifluoromethane	11.9	0.20	ug/L	10.0	ND	119	48-147			
Surrogate: 1,2-Dichloroethane-d4	5.56		ug/L	5.00	5.73	111	80-129			
Surrogate: Toluene-d8	5.22		ug/L	5.00	4.99	104	80-120			
Surrogate: 4-Bromofluorobenzene	4.76		ug/L	5.00	4.55	95.2	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.86		ug/L	5.00	5.10	97.1	80-120			

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

Matrix Spike Dup (BLC0619-MSD1)										
		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:32				
Chloromethane	11.2	0.50	ug/L	10.0	ND	112	60-138	7.68	30	



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Redmond WA, 98052-3333

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

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 (BLC0619-MSD1)										
		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:32				
Vinyl Chloride	10.2	0.10	ug/L	10.0	ND	102	66-133	10.50	30	
Bromomethane	11.0	1.00	ug/L	10.0	ND	110	72-131	6.29	30	
Chloroethane	11.8	0.20	ug/L	10.0	ND	118	60-155	0.64	30	
Trichlorofluoromethane	11.1	0.20	ug/L	10.0	ND	111	62-141	10.80	30	
Acrolein	48.0	5.00	ug/L	50.0	ND	95.9	52-190	11.00	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.5	0.20	ug/L	10.0	ND	105	76-129	10.60	30	
Acetone	62.6	5.00	ug/L	50.0	ND	116	58-142	12.40	30	
1,1-Dichloroethene	11.7	0.20	ug/L	10.0	ND	117	69-135	4.92	30	
Iodomethane	11.0	1.00	ug/L	10.0	ND	110	56-147	6.14	30	
Methylene Chloride	11.0	1.00	ug/L	10.0	ND	110	65-135	5.04	30	
Acrylonitrile	11.5	1.00	ug/L	10.0	ND	115	64-134	5.18	30	
Carbon Disulfide	11.6	0.20	ug/L	10.0	ND	116	78-125	5.86	30	
trans-1,2-Dichloroethene	10.7	0.20	ug/L	10.0	ND	107	78-128	4.88	30	
Vinyl Acetate	7.92	0.20	ug/L	10.0	ND	79.2	55-138	1.25	30	
1,1-Dichloroethane	11.2	0.20	ug/L	10.0	ND	112	76-124	6.45	30	
2-Butanone	58.5	5.00	ug/L	50.0	ND	117	61-140	6.40	30	
2,2-Dichloropropane	8.85	0.20	ug/L	10.0	ND	88.5	66-147	6.63	30	
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0	ND	107	80-121	7.62	30	
Chloroform	11.4	0.20	ug/L	10.0	ND	114	80-122	5.39	30	
Bromochloromethane	10.7	0.20	ug/L	10.0	ND	107	80-121	6.91	30	
1,1,1-Trichloroethane	11.9	0.20	ug/L	10.0	ND	119	79-123	4.31	30	
1,1-Dichloropropene	10.6	0.10	ug/L	10.0	ND	106	80-127	5.27	30	
Carbon tetrachloride	8.56	0.20	ug/L	10.0	ND	85.6	53-137	1.22	30	
1,2-Dichloroethane	11.2	0.20	ug/L	10.0	ND	112	75-123	5.08	30	
Benzene	11.0	0.20	ug/L	10.0	ND	110	80-120	5.77	30	
Trichloroethene	10.3	0.20	ug/L	10.0	ND	103	80-120	5.45	30	
1,2-Dichloropropane	10.9	0.20	ug/L	10.0	ND	109	80-120	5.14	30	
Bromodichloromethane	11.0	0.20	ug/L	10.0	ND	110	80-121	5.29	30	
Dibromomethane	10.7	0.20	ug/L	10.0	ND	107	80-120	7.19	30	
2-Chloroethyl vinyl ether	ND	1.00	ug/L	10.0	ND		64-120			*, U
4-Methyl-2-Pentanone	57.2	2.50	ug/L	50.0	ND	114	67-133	8.37	30	
cis-1,3-Dichloropropene	10.9	0.20	ug/L	10.0	ND	109	80-124	3.14	30	
Toluene	10.6	0.20	ug/L	10.0	ND	106	80-120	5.90	30	
trans-1,3-Dichloropropene	9.39	0.20	ug/L	10.0	ND	93.9	71-127	4.30	30	
2-Hexanone	56.8	5.00	ug/L	50.0	ND	114	69-133	5.13	30	



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

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 (BLC0619-MSD1)										
		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:32				
1,1,2-Trichloroethane	10.7	0.20	ug/L	10.0	ND	107	80-121	9.00	30	
1,3-Dichloropropane	10.4	0.10	ug/L	10.0	ND	104	80-120	4.28	30	
Tetrachloroethene	9.83	0.20	ug/L	10.0	ND	98.3	80-120	3.78	30	
Dibromochloromethane	8.11	0.20	ug/L	10.0	ND	81.1	65-135	0.05	30	
1,2-Dibromoethane	11.6	0.10	ug/L	10.0	ND	116	80-121	9.05	30	
Chlorobenzene	10.5	0.20	ug/L	10.0	ND	105	80-120	4.73	30	
Ethylbenzene	10.4	0.20	ug/L	10.0	ND	104	80-120	5.46	30	
1,1,1,2-Tetrachloroethane	8.39	0.20	ug/L	10.0	ND	83.9	80-120	0.88	30	
m,p-Xylene	21.8	0.40	ug/L	20.0	ND	109	80-121	5.94	30	
o-Xylene	10.6	0.20	ug/L	10.0	ND	106	80-121	7.09	30	
Xylenes, total	32.5	0.60	ug/L	30.0	ND	108	76-127	6.32	30	
Styrene	11.2	0.20	ug/L	10.0	ND	112	80-124	5.96	30	
Bromoform	6.85	0.20	ug/L	10.0	ND	68.5	51-134	4.64	30	Q
1,1,2,2-Tetrachloroethane	10.4	0.20	ug/L	10.0	ND	104	77-123	3.51	30	
1,2,3-Trichloropropane	10.1	0.25	ug/L	10.0	ND	101	76-125	4.04	30	
trans-1,4-Dichloro 2-Butene	7.73	1.00	ug/L	10.0	ND	77.3	55-129	7.96	30	
n-Propylbenzene	11.0	0.20	ug/L	10.0	ND	110	78-130	3.18	30	
Bromobenzene	9.98	0.20	ug/L	10.0	ND	99.8	80-120	1.71	30	
Isopropyl Benzene	11.0	0.20	ug/L	10.0	ND	110	80-128	3.47	30	
2-Chlorotoluene	10.0	0.10	ug/L	10.0	ND	100	78-122	2.28	30	
4-Chlorotoluene	10.2	0.20	ug/L	10.0	ND	102	80-121	3.48	30	
t-Butylbenzene	10.5	0.20	ug/L	10.0	ND	105	78-125	4.16	30	
1,3,5-Trimethylbenzene	10.9	0.20	ug/L	10.0	ND	109	80-129	3.55	30	
1,2,4-Trimethylbenzene	10.8	0.20	ug/L	10.0	ND	108	80-127	3.00	30	
s-Butylbenzene	10.6	0.20	ug/L	10.0	ND	106	78-129	3.12	30	
4-Isopropyl Toluene	10.6	0.20	ug/L	10.0	ND	106	79-130	2.97	30	
1,3-Dichlorobenzene	9.96	0.20	ug/L	10.0	ND	99.6	80-120	4.46	30	
1,4-Dichlorobenzene	10.0	0.20	ug/L	10.0	ND	100	80-120	3.79	30	
n-Butylbenzene	10.5	0.20	ug/L	10.0	ND	105	74-129	3.96	30	
1,2-Dichlorobenzene	9.96	0.20	ug/L	10.0	ND	99.6	80-120	5.34	30	
1,2-Dibromo-3-chloropropane	8.21	0.50	ug/L	10.0	ND	82.1	62-123	0.17	30	
1,2,4-Trichlorobenzene	10.1	0.50	ug/L	10.0	ND	101	64-124	4.26	30	
Hexachloro-1,3-Butadiene	9.37	0.50	ug/L	10.0	ND	93.7	65-145	1.03	30	B
Naphthalene	11.2	0.50	ug/L	10.0	ND	112	50-134	5.44	30	
1,2,3-Trichlorobenzene	10.3	0.50	ug/L	10.0	ND	103	49-133	3.44	30	



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:28
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Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0619 - EPA 8260D

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 (BLC0619-MSD1)		Source: 23C0512-06		Prepared: 23-Mar-2023		Analyzed: 23-Mar-2023 19:32				
Dichlorodifluoromethane	11.3	0.20	ug/L	10.0	ND	113	48-147	5.69	30	
Surrogate: 1,2-Dichloroethane-d4	5.43		ug/L	5.00	5.73	109	80-129			
Surrogate: Toluene-d8	5.10		ug/L	5.00	4.99	102	80-120			
Surrogate: 4-Bromofluorobenzene	4.66		ug/L	5.00	4.55	93.2	80-120			
Surrogate: 1,2-Dichlorobenzene-d4	4.94		ug/L	5.00	5.10	98.9	80-120			

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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0586-BLK1)										
Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 16:36										
Phenol	ND	1.0	ug/L							U
bis(2-chloroethyl) ether	ND	1.0	ug/L							U
2-Chlorophenol	ND	1.0	ug/L							U
1,3-Dichlorobenzene	ND	1.0	ug/L							U
1,4-Dichlorobenzene	ND	1.0	ug/L							U
Benzyl Alcohol	ND	2.0	ug/L							U
1,2-Dichlorobenzene	ND	1.0	ug/L							U
2-Methylphenol	ND	1.0	ug/L							U
2,2'-Oxybis(1-chloropropane)	ND	1.0	ug/L							U
4-Methylphenol	ND	2.0	ug/L							U
N-Nitroso-di-n-Propylamine	ND	1.0	ug/L							U
Hexachloroethane	ND	2.0	ug/L							U
Nitrobenzene	ND	1.0	ug/L							U
Isophorone	ND	1.0	ug/L							U
2-Nitrophenol	ND	3.0	ug/L							U
2,4-Dimethylphenol	ND	3.0	ug/L							U
Bis(2-Chloroethoxy)methane	ND	1.0	ug/L							U
Benzoic acid	ND	20.0	ug/L							U
2,4-Dichlorophenol	ND	3.0	ug/L							U
1,2,4-Trichlorobenzene	ND	1.0	ug/L							U
Naphthalene	ND	1.0	ug/L							U
4-Chloroaniline	ND	5.0	ug/L							U
Hexachlorobutadiene	ND	3.0	ug/L							U
4-Chloro-3-Methylphenol	ND	3.0	ug/L							U
2-Methylnaphthalene	ND	1.0	ug/L							U
Hexachlorocyclopentadiene	ND	5.0	ug/L							U
2,4,6-Trichlorophenol	ND	3.0	ug/L							U
2,4,5-Trichlorophenol	ND	5.0	ug/L							U
2-Chloronaphthalene	ND	1.0	ug/L							U
2-Nitroaniline	ND	3.0	ug/L							U
Dimethylphthalate	ND	1.0	ug/L							U
Acenaphthylene	ND	1.0	ug/L							U
2,6-Dinitrotoluene	ND	3.0	ug/L							U
3-Nitroaniline	ND	3.0	ug/L							U
Acenaphthene	ND	1.0	ug/L							U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0586-BLK1)										
Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 16:36										
2,4-Dinitrophenol	ND	20.0	ug/L							U
Dibenzofuran	ND	1.0	ug/L							U
4-Nitrophenol	ND	10.0	ug/L							U
2,4-Dinitrotoluene	ND	3.0	ug/L							U
Fluorene	ND	1.0	ug/L							U
Diethyl phthalate	ND	1.0	ug/L							U
4-Chlorophenylphenyl ether	ND	1.0	ug/L							U
4-Nitroaniline	ND	3.0	ug/L							U
4,6-Dinitro-2-methylphenol	ND	10.0	ug/L							U
N-Nitrosodiphenylamine	ND	1.0	ug/L							U
4-Bromophenyl phenyl ether	ND	1.0	ug/L							U
Hexachlorobenzene	ND	1.0	ug/L							U
Pentachlorophenol	ND	10.0	ug/L							U
Phenanthrene	ND	1.0	ug/L							U
Anthracene	ND	1.0	ug/L							U
Carbazole	ND	1.0	ug/L							U
Di-n-Butylphthalate	ND	1.0	ug/L							U
Fluoranthene	ND	1.0	ug/L							U
Pyrene	ND	1.0	ug/L							U
Butylbenzylphthalate	ND	1.0	ug/L							U
Benzo(a)anthracene	ND	1.0	ug/L							U
3,3'-Dichlorobenzidine	ND	5.0	ug/L							U
Chrysene	ND	1.0	ug/L							U
bis(2-Ethylhexyl)phthalate	ND	3.0	ug/L							U
Di-n-Octylphthalate	ND	1.0	ug/L							U
Benzo(a)pyrene	ND	1.0	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	1.0	ug/L							U
Dibenzo(a,h)anthracene	ND	1.0	ug/L							U
Benzo(g,h,i)perylene	ND	1.0	ug/L							U
Benzo(a)fluoranthene, Total	ND	2.0	ug/L							U
1-Methylnaphthalene	ND	1.0	ug/L							U
<i>Surrogate: 2-Fluorophenol</i>	23.6		ug/L	37.5		62.8			33-120	
<i>Surrogate: Phenol-d5</i>	25.1		ug/L	37.5		66.9			38-120	
<i>Surrogate: 2-Chlorophenol-d4</i>	26.7		ug/L	37.5		71.2			41-120	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0586-BLK1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 16:36						
Surrogate: 1,2-Dichlorobenzene-d4	16.5		ug/L	25.0	66.0		20-120			
Surrogate: Nitrobenzene-d5	16.9		ug/L	25.0	67.5		27-120			
Surrogate: 2-Fluorobiphenyl	17.5		ug/L	25.0	70.0		33-120			
Surrogate: 2,4,6-Tribromophenol	32.6		ug/L	37.5	87.0		52-120			Q
Surrogate: p-Terphenyl-d14	18.7		ug/L	25.0	74.6		28-120			
LCS (BLC0586-BS1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:10						
Phenol	15.6	1.0	ug/L	25.0	62.6		35-120			
bis(2-chloroethyl) ether	17.9	1.0	ug/L	25.0	71.4		46.5-120			
2-Chlorophenol	15.5	1.0	ug/L	25.0	62.0		48-120			
1,3-Dichlorobenzene	15.2	1.0	ug/L	25.0	60.8		34.2-120			
1,4-Dichlorobenzene	15.5	1.0	ug/L	25.0	61.8		36-120			
Benzyl Alcohol	17.3	2.0	ug/L	25.0	69.1		27.4-120			
1,2-Dichlorobenzene	16.2	1.0	ug/L	25.0	64.6		38.4-120			
2-Methylphenol	15.5	1.0	ug/L	25.0	62.0		47.8-120			
2,2'-Oxybis(1-chloropropane)	19.0	1.0	ug/L	25.0	76.1		40.4-120			
4-Methylphenol	16.4	2.0	ug/L	25.0	65.7		52.3-120			
N-Nitroso-di-n-Propylamine	18.0	1.0	ug/L	25.0	71.9		51.4-120			
Hexachloroethane	16.0	2.0	ug/L	25.0	64.0		29.5-120			
Nitrobenzene	17.9	1.0	ug/L	25.0	71.6		51.5-120			
Isophorone	23.0	1.0	ug/L	25.0	92.0		62.3-128			
2-Nitrophenol	17.7	3.0	ug/L	25.0	70.8		58.6-124			
2,4-Dimethylphenol	36.3	3.0	ug/L	65.0	55.9		38.5-120			
Bis(2-Chloroethoxy)methane	20.5	1.0	ug/L	25.0	81.9		52.9-120			
Benzoic acid	101	20.0	ug/L	115	87.5		38.2-120			
2,4-Dichlorophenol	45.2	3.0	ug/L	65.0	69.6		43.6-120			
1,2,4-Trichlorobenzene	16.0	1.0	ug/L	25.0	64.1		38.6-120			
Naphthalene	16.9	1.0	ug/L	25.0	67.5		40.5-120			
4-Chloroaniline	39.9	5.0	ug/L	65.0	61.4		42.7-120			
Hexachlorobutadiene	16.4	3.0	ug/L	25.0	65.8		32.3-120			
4-Chloro-3-Methylphenol	46.6	3.0	ug/L	65.0	71.7		51.9-120			
2-Methylnaphthalene	18.2	1.0	ug/L	25.0	72.9		47.3-120			
Hexachlorocyclopentadiene	21.1	5.0	ug/L	65.0	32.4		23.3-120			Q
2,4,6-Trichlorophenol	45.9	3.0	ug/L	65.0	70.6		47-120			
2,4,5-Trichlorophenol	46.2	5.0	ug/L	65.0	71.1		48.4-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0586-BS1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:10						
2-Chloronaphthalene	17.5	1.0	ug/L	25.0		70.1	47.7-123			
2-Nitroaniline	45.7	3.0	ug/L	65.0		70.2	56.8-120			
Dimethylphthalate	19.7	1.0	ug/L	25.0		78.8	65.2-125			
Acenaphthylene	18.2	1.0	ug/L	25.0		72.8	44.1-120			
2,6-Dinitrotoluene	51.3	3.0	ug/L	65.0		78.9	69.3-140			
3-Nitroaniline	49.2	3.0	ug/L	65.0		75.7	60.9-120			
Acenaphthene	18.3	1.0	ug/L	25.0		73.1	50.4-120			
2,4-Dinitrophenol	77.4	20.0	ug/L	115		67.3	33.7-183			
Dibenzofuran	19.5	1.0	ug/L	25.0		78.0	49.9-120			
4-Nitrophenol	45.8	10.0	ug/L	65.0		70.5	50.2-136			
2,4-Dinitrotoluene	50.5	3.0	ug/L	65.0		77.6	66.8-132			
Fluorene	19.5	1.0	ug/L	25.0		78.1	57.8-120			
Diethyl phthalate	21.7	1.0	ug/L	25.0		87.0	68.1-120			
4-Chlorophenylphenyl ether	19.7	1.0	ug/L	25.0		78.8	59.1-127			
4-Nitroaniline	55.2	3.0	ug/L	65.0		85.0	56-122			
4,6-Dinitro-2-methylphenol	73.3	10.0	ug/L	115		63.7	37.9-162			
N-Nitrosodiphenylamine	18.1	1.0	ug/L	25.0		72.2	59.6-120			
4-Bromophenyl phenyl ether	20.4	1.0	ug/L	25.0		81.7	59.6-120			
Hexachlorobenzene	19.0	1.0	ug/L	25.0		76.0	53.7-120			
Pentachlorophenol	48.1	10.0	ug/L	65.0		74.0	40.3-128			
Phenanthrene	18.6	1.0	ug/L	25.0		74.3	58.8-120			
Anthracene	16.7	1.0	ug/L	25.0		67.0	60.5-120			
Carbazole	19.4	1.0	ug/L	25.0		77.6	59.7-120			
Di-n-Butylphthalate	20.6	1.0	ug/L	25.0		82.5	71-120			
Fluoranthene	20.0	1.0	ug/L	25.0		80.0	66.7-120			
Pyrene	18.6	1.0	ug/L	25.0		74.4	62.7-127			
Butylbenzylphthalate	20.2	1.0	ug/L	25.0		80.9	67.4-128			
Benzo(a)anthracene	18.8	1.0	ug/L	25.0		75.2	58.3-128			
3,3'-Dichlorobenzidine	39.4	5.0	ug/L	65.0		60.7	34.1-120			Q
Chrysene	18.5	1.0	ug/L	25.0		74.0	58.9-120			
bis(2-Ethylhexyl)phthalate	20.3	3.0	ug/L	25.0		81.1	68.3-123			
Di-n-Octylphthalate	20.3	1.0	ug/L	25.0		81.3	61.5-120			
Benzo(a)pyrene	18.8	1.0	ug/L	25.0		75.3	70.6-120			
Indeno(1,2,3-cd)pyrene	17.4	1.0	ug/L	25.0		69.7	46.5-120			
Dibenzo(a,h)anthracene	16.8	1.0	ug/L	25.0		67.3	49.6-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0586-BS1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:10						
Benzo(g,h,i)perylene	16.9	1.0	ug/L	25.0		67.6	37-120			
Benzo(a)fluoranthene, Total	36.8	2.0	ug/L	50.0		73.6	66.5-120			
1-Methylnaphthalene	19.2	1.0	ug/L	25.0		76.6	46.9-120			
<i>Surrogate: 2-Fluorophenol</i>	24.6		ug/L	37.5		65.7	33-120			
<i>Surrogate: Phenol-d5</i>	28.2		ug/L	37.5		75.2	38-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	28.3		ug/L	37.5		75.4	41-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	17.4		ug/L	25.0		69.7	20-120			
<i>Surrogate: Nitrobenzene-d5</i>	18.7		ug/L	25.0		74.7	27-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	18.7		ug/L	25.0		74.7	33-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	38.8		ug/L	37.5		103	52-120			Q
<i>Surrogate: p-Terphenyl-d14</i>	20.4		ug/L	25.0		81.5	28-120			

LCS Dup (BLC0586-BSD1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:43						
Phenol	16.2	1.0	ug/L	25.0		64.9	35-120	3.62	30	
bis(2-chloroethyl) ether	19.2	1.0	ug/L	25.0		76.8	46.5-120	7.26	30	
2-Chlorophenol	16.0	1.0	ug/L	25.0		64.1	48-120	3.36	30	
1,3-Dichlorobenzene	15.5	1.0	ug/L	25.0		61.9	34.2-120	1.80	30	
1,4-Dichlorobenzene	16.0	1.0	ug/L	25.0		64.0	36-120	3.44	30	
Benzyl Alcohol	19.5	2.0	ug/L	25.0		77.9	27.4-120	11.90	30	
1,2-Dichlorobenzene	16.9	1.0	ug/L	25.0		67.7	38.4-120	4.58	30	
2-Methylphenol	16.3	1.0	ug/L	25.0		65.3	47.8-120	5.26	30	
2,2'-Oxybis(1-chloropropane)	20.1	1.0	ug/L	25.0		80.3	40.4-120	5.39	30	
4-Methylphenol	17.0	2.0	ug/L	25.0		68.0	52.3-120	3.34	30	
N-Nitroso-di-n-Propylamine	18.6	1.0	ug/L	25.0		74.4	51.4-120	3.36	30	
Hexachloroethane	16.8	2.0	ug/L	25.0		67.0	29.5-120	4.65	30	
Nitrobenzene	19.4	1.0	ug/L	25.0		77.7	51.5-120	8.16	30	
Isophorone	24.3	1.0	ug/L	25.0		97.3	62.3-128	5.58	30	
2-Nitrophenol	17.9	3.0	ug/L	25.0		71.7	58.6-124	1.37	30	
2,4-Dimethylphenol	38.0	3.0	ug/L	65.0		58.5	38.5-120	4.52	30	
Bis(2-Chloroethoxy)methane	21.0	1.0	ug/L	25.0		84.0	52.9-120	2.51	30	
Benzoic acid	106	20.0	ug/L	115		91.7	38.2-120	4.69	30	
2,4-Dichlorophenol	47.2	3.0	ug/L	65.0		72.7	43.6-120	4.32	30	
1,2,4-Trichlorobenzene	16.7	1.0	ug/L	25.0		66.8	38.6-120	4.11	30	
Naphthalene	17.3	1.0	ug/L	25.0		69.1	40.5-120	2.40	30	
4-Chloroaniline	40.8	5.0	ug/L	65.0		62.7	42.7-120	2.14	30	



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Redmond WA, 98052-3333

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0586-BSD1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:43						
Hexachlorobutadiene	16.4	3.0	ug/L	25.0		65.7	32.3-120	0.10	30	
4-Chloro-3-Methylphenol	48.8	3.0	ug/L	65.0		75.0	51.9-120	4.58	30	
2-Methylnaphthalene	18.7	1.0	ug/L	25.0		74.7	47.3-120	2.46	30	
Hexachlorocyclopentadiene	23.3	5.0	ug/L	65.0		35.8	23.3-120	9.94	30	Q
2,4,6-Trichlorophenol	49.1	3.0	ug/L	65.0		75.6	47-120	6.86	30	
2,4,5-Trichlorophenol	49.6	5.0	ug/L	65.0		76.2	48.4-120	6.92	30	
2-Chloronaphthalene	18.4	1.0	ug/L	25.0		73.7	47.7-123	4.99	30	
2-Nitroaniline	47.4	3.0	ug/L	65.0		72.9	56.8-120	3.73	30	
Dimethylphthalate	21.0	1.0	ug/L	25.0		84.0	65.2-125	6.40	30	
Acenaphthylene	19.3	1.0	ug/L	25.0		77.1	44.1-120	5.69	30	
2,6-Dinitrotoluene	52.2	3.0	ug/L	65.0		80.3	69.3-140	1.73	30	
3-Nitroaniline	51.9	3.0	ug/L	65.0		79.8	60.9-120	5.32	30	
Acenaphthene	19.2	1.0	ug/L	25.0		76.9	50.4-120	5.05	30	
2,4-Dinitrophenol	83.4	20.0	ug/L	115		72.5	33.7-183	7.50	30	
Dibenzofuran	20.6	1.0	ug/L	25.0		82.3	49.9-120	5.34	30	
4-Nitrophenol	51.0	10.0	ug/L	65.0		78.5	50.2-136	10.80	30	
2,4-Dinitrotoluene	52.2	3.0	ug/L	65.0		80.3	66.8-132	3.39	30	
Fluorene	20.5	1.0	ug/L	25.0		82.2	57.8-120	5.09	30	
Diethyl phthalate	22.8	1.0	ug/L	25.0		91.1	68.1-120	4.63	30	
4-Chlorophenylphenyl ether	20.9	1.0	ug/L	25.0		83.6	59.1-127	5.83	30	
4-Nitroaniline	58.4	3.0	ug/L	65.0		89.8	56-122	5.58	30	
4,6-Dinitro-2-methylphenol	81.4	10.0	ug/L	115		70.8	37.9-162	10.50	30	
N-Nitrosodiphenylamine	19.2	1.0	ug/L	25.0		76.6	59.6-120	5.90	30	
4-Bromophenyl phenyl ether	21.3	1.0	ug/L	25.0		85.3	59.6-120	4.30	30	
Hexachlorobenzene	20.0	1.0	ug/L	25.0		80.0	53.7-120	5.18	30	
Pentachlorophenol	51.5	10.0	ug/L	65.0		79.2	40.3-128	6.88	30	
Phenanthrene	19.4	1.0	ug/L	25.0		77.6	58.8-120	4.38	30	
Anthracene	17.6	1.0	ug/L	25.0		70.4	60.5-120	4.92	30	
Carbazole	20.5	1.0	ug/L	25.0		81.9	59.7-120	5.39	30	
Di-n-Butylphthalate	21.8	1.0	ug/L	25.0		87.0	71-120	5.31	30	
Fluoranthene	21.4	1.0	ug/L	25.0		85.6	66.7-120	6.69	30	
Pyrene	19.2	1.0	ug/L	25.0		76.9	62.7-127	3.25	30	
Butylbenzylphthalate	21.2	1.0	ug/L	25.0		84.9	67.4-128	4.79	30	
Benzo(a)anthracene	20.0	1.0	ug/L	25.0		79.9	58.3-128	6.08	30	
3,3'-Dichlorobenzidine	40.0	5.0	ug/L	65.0		61.6	34.1-120	1.51	30	Q



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Reported:
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Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0586-BSD1)				Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 17:43						
Chrysene	19.6	1.0	ug/L	25.0		78.5	58.9-120	5.89	30	
bis(2-Ethylhexyl)phthalate	21.7	3.0	ug/L	25.0		86.8	68.3-123	6.81	30	
Di-n-Octylphthalate	22.0	1.0	ug/L	25.0		87.9	61.5-120	7.73	30	
Benzo(a)pyrene	19.7	1.0	ug/L	25.0		79.0	70.6-120	4.79	30	
Indeno(1,2,3-cd)pyrene	18.8	1.0	ug/L	25.0		75.3	46.5-120	7.77	30	
Dibenzo(a,h)anthracene	18.3	1.0	ug/L	25.0		73.2	49.6-120	8.38	30	
Benzo(g,h,i)perylene	17.7	1.0	ug/L	25.0		70.9	37-120	4.82	30	
Benzofluoranthenes, Total	38.9	2.0	ug/L	50.0		77.7	66.5-120	5.42	30	
1-Methylnaphthalene	19.8	1.0	ug/L	25.0		79.4	46.9-120	3.50	30	
<i>Surrogate: 2-Fluorophenol</i>	25.1		ug/L	37.5		66.8	33-120			
<i>Surrogate: Phenol-d5</i>	28.5		ug/L	37.5		76.1	38-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	28.3		ug/L	37.5		75.6	41-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	17.9		ug/L	25.0		71.5	20-120			
<i>Surrogate: Nitrobenzene-d5</i>	18.1		ug/L	25.0		72.3	27-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	19.6		ug/L	25.0		78.5	33-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	38.9		ug/L	37.5		104	52-120			Q
<i>Surrogate: p-Terphenyl-d14</i>	20.7		ug/L	25.0		82.7	28-120			
Matrix Spike (BLC0586-MS1)				Source: 23C0512-06 Prepared: 27-Mar-2023 Analyzed: 29-Mar-2023 21:37						
Phenol	14.1	1.0	ug/L	25.0	ND	56.5	35-120			
bis(2-chloroethyl) ether	16.7	1.0	ug/L	25.0	ND	66.7	46.5-120			
2-Chlorophenol	14.1	1.0	ug/L	25.0	ND	56.6	48-120			
1,3-Dichlorobenzene	13.5	1.0	ug/L	25.0	ND	53.8	34.2-120			
1,4-Dichlorobenzene	14.1	1.0	ug/L	25.0	ND	56.6	36-120			
Benzyl Alcohol	16.3	2.0	ug/L	25.0	ND	65.2	27.4-120			
1,2-Dichlorobenzene	14.7	1.0	ug/L	25.0	ND	58.9	38.4-120			
2-Methylphenol	14.2	1.0	ug/L	25.0	ND	56.8	47.8-120			
2,2'-Oxybis(1-chloropropane)	17.5	1.0	ug/L	25.0	ND	69.8	40.4-120			
4-Methylphenol	15.1	2.0	ug/L	25.0	ND	60.3	52.3-120			
N-Nitroso-di-n-Propylamine	16.3	1.0	ug/L	25.0	ND	65.2	51.4-120			
Hexachloroethane	13.7	2.0	ug/L	25.0	ND	54.8	29.5-120			
Nitrobenzene	16.8	1.0	ug/L	25.0	ND	67.0	51.5-120			
Isophorone	21.4	1.0	ug/L	25.0	ND	85.5	62.3-120			
2-Nitrophenol	16.3	3.0	ug/L	25.0	ND	65.2	58.6-124			
2,4-Dimethylphenol	36.0	3.0	ug/L	65.0	ND	55.4	38.5-120			



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Project Manager: Gary Zimmerman

Reported:
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Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLC0586-MS1)		Source: 23C0512-06		Prepared: 27-Mar-2023		Analyzed: 29-Mar-2023 21:37				
Bis(2-Chloroethoxy)methane	18.9	1.0	ug/L	25.0	ND	75.5	52.9-120			
Benzoic acid	77.3	20.0	ug/L	115	ND	67.2	38.2-120			
2,4-Dichlorophenol	42.7	3.0	ug/L	65.0	ND	65.7	43.6-120			
1,2,4-Trichlorobenzene	15.0	1.0	ug/L	25.0	ND	59.9	28.6-120			
Naphthalene	15.9	1.0	ug/L	25.0	ND	63.5	40.5-120			
4-Chloroaniline	33.8	5.0	ug/L	65.0	ND	52.1	42.7-132			
Hexachlorobutadiene	14.9	3.0	ug/L	25.0	ND	59.6	32.3-120			
4-Chloro-3-Methylphenol	44.1	3.0	ug/L	65.0	ND	67.9	51.9-120			
2-Methylnaphthalene	16.9	1.0	ug/L	25.0	ND	67.6	47.3-120			
Hexachlorocyclopentadiene	15.8	5.0	ug/L	65.0	ND	24.3	23.3-120			Q
2,4,6-Trichlorophenol	43.9	3.0	ug/L	65.0	ND	67.6	47-120			
2,4,5-Trichlorophenol	44.2	5.0	ug/L	65.0	ND	68.0	48.4-120			
2-Chloronaphthalene	16.5	1.0	ug/L	25.0	ND	66.1	47.7-123			
2-Nitroaniline	43.4	3.0	ug/L	65.0	ND	66.8	56.8-120			
Dimethylphthalate	18.3	1.0	ug/L	25.0	ND	73.3	65.2-125			
Acenaphthylene	17.0	1.0	ug/L	25.0	ND	67.9	44.1-120			
2,6-Dinitrotoluene	47.5	3.0	ug/L	65.0	ND	73.1	69.3-140			
3-Nitroaniline	42.6	3.0	ug/L	65.0	ND	65.5	60.9-120			
Acenaphthene	17.2	1.0	ug/L	25.0	ND	68.6	50.4-120			
2,4-Dinitrophenol	64.0	20.0	ug/L	115	ND	55.6	33.7-183			
Dibenzofuran	18.2	1.0	ug/L	25.0	ND	72.9	49.9-120			
4-Nitrophenol	42.4	10.0	ug/L	65.0	ND	65.2	50.2-136			
2,4-Dinitrotoluene	47.4	3.0	ug/L	65.0	ND	73.0	66.8-132			
Fluorene	18.4	1.0	ug/L	25.0	ND	73.4	57.8-120			
Diethyl phthalate	20.6	1.0	ug/L	25.0	ND	82.5	68.1-120			
4-Chlorophenylphenyl ether	18.2	1.0	ug/L	25.0	ND	72.7	59.1-127			
4-Nitroaniline	49.4	3.0	ug/L	65.0	ND	76.0	56-122			
4,6-Dinitro-2-methylphenol	66.2	10.0	ug/L	115	ND	57.6	37.9-162			
N-Nitrosodiphenylamine	17.2	1.0	ug/L	25.0	ND	68.8	59.6-120			
4-Bromophenyl phenyl ether	18.9	1.0	ug/L	25.0	ND	75.7	59.6-120			
Hexachlorobenzene	17.9	1.0	ug/L	25.0	ND	71.7	53.7-120			
Pentachlorophenol	47.4	10.0	ug/L	65.0	ND	73.0	40.3-128			
Phenanthrene	17.4	1.0	ug/L	25.0	ND	69.6	58.8-120			
Anthracene	15.8	1.0	ug/L	25.0	ND	63.1	60.5-120			
Carbazole	18.9	1.0	ug/L	25.0	ND	75.5	59.7-120			



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Project: Landsburg
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Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLC0586-MS1)										
		Source: 23C0512-06		Prepared: 27-Mar-2023		Analyzed: 29-Mar-2023 21:37				
Di-n-Butylphthalate	19.8	1.0	ug/L	25.0	ND	79.2	71-120			
Fluoranthene	19.5	1.0	ug/L	25.0	ND	77.8	66.7-120			
Pyrene	17.9	1.0	ug/L	25.0	ND	71.5	62.7-127			
Butylbenzylphthalate	19.9	1.0	ug/L	25.0	ND	79.5	67.4-128			
Benzo(a)anthracene	18.3	1.0	ug/L	25.0	ND	73.1	58.3-128			
3,3'-Dichlorobenzidine	27.5	5.0	ug/L	65.0	ND	42.4	34.1-120			Q
Chrysene	18.3	1.0	ug/L	25.0	ND	73.4	58.9-120			
bis(2-Ethylhexyl)phthalate	19.8	3.0	ug/L	25.0	ND	73.0	68.3-120			
Di-n-Octylphthalate	20.3	1.0	ug/L	25.0	ND	81.0	61.5-120			
Benzo(a)pyrene	18.3	1.0	ug/L	25.0	ND	73.3	70.6-120			
Indeno(1,2,3-cd)pyrene	17.1	1.0	ug/L	25.0	ND	68.5	46.5-120			
Dibenzo(a,h)anthracene	16.6	1.0	ug/L	25.0	ND	66.3	49.6-120			
Benzo(g,h,i)perylene	16.3	1.0	ug/L	25.0	ND	65.2	37-120			
Benzo(a)fluoranthene, Total	35.0	2.0	ug/L	50.0	ND	69.9	66.5-120			
1-Methylnaphthalene	18.1	1.0	ug/L	25.0	ND	72.5	46.9-120			
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Surrogate: 2-Fluorophenol	22.6		ug/L	37.5	22.9	60.2	33-120			
Surrogate: Phenol-d5	25.1		ug/L	37.5	24.7	67.0	38-120			
Surrogate: 2-Chlorophenol-d4	25.7		ug/L	37.5	26.6	68.4	41-120			
Surrogate: 1,2-Dichlorobenzene-d4	16.3		ug/L	25.0	16.7	65.2	20-120			
Surrogate: Nitrobenzene-d5	17.5		ug/L	25.0	16.8	70.0	27-120			
Surrogate: 2-Fluorobiphenyl	18.0		ug/L	25.0	18.1	71.9	33-120			
Surrogate: 2,4,6-Tribromophenol	36.3		ug/L	37.5	34.5	96.9	52-120			Q
Surrogate: p-Terphenyl-d14	19.8		ug/L	25.0	20.4	79.0	28-120			

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

Matrix Spike Dup (BLC0586-MSD1)										
		Source: 23C0512-06		Prepared: 27-Mar-2023		Analyzed: 29-Mar-2023 22:10				
Phenol	15.5	1.0	ug/L	25.0	ND	61.8	35-120	8.99	30	
bis(2-chloroethyl) ether	18.3	1.0	ug/L	25.0	ND	73.4	46.5-120	9.51	30	
2-Chlorophenol	15.4	1.0	ug/L	25.0	ND	61.5	48-120	8.25	30	
1,3-Dichlorobenzene	15.1	1.0	ug/L	25.0	ND	60.2	34.2-120	11.20	30	
1,4-Dichlorobenzene	15.5	1.0	ug/L	25.0	ND	62.1	36-120	9.28	30	
Benzyl Alcohol	17.5	2.0	ug/L	25.0	ND	70.0	27.4-120	7.04	30	
1,2-Dichlorobenzene	16.0	1.0	ug/L	25.0	ND	64.0	38.4-120	8.38	30	
2-Methylphenol	15.7	1.0	ug/L	25.0	ND	62.7	47.8-120	9.83	30	



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Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLC0586-MSD1)										
		Source: 23C0512-06		Prepared: 27-Mar-2023		Analyzed: 29-Mar-2023 22:10				
2,2'-Oxybis(1-chloropropane)	18.6	1.0	ug/L	25.0	ND	74.4	40.4-120	6.41	30	
4-Methylphenol	16.1	2.0	ug/L	25.0	ND	64.5	52.3-120	6.58	30	
N-Nitroso-di-n-Propylamine	17.3	1.0	ug/L	25.0	ND	69.3	51.4-120	6.05	30	
Hexachloroethane	16.2	2.0	ug/L	25.0	ND	64.9	29.5-120	16.90	30	
Nitrobenzene	17.7	1.0	ug/L	25.0	ND	70.7	51.5-120	5.44	30	
Isophorone	22.5	1.0	ug/L	25.0	ND	90.0	62.3-120	5.08	30	
2-Nitrophenol	17.5	3.0	ug/L	25.0	ND	70.2	58.6-124	7.34	30	
2,4-Dimethylphenol	36.1	3.0	ug/L	65.0	ND	55.6	38.5-120	0.33	30	
Bis(2-Chloroethoxy)methane	19.8	1.0	ug/L	25.0	ND	79.3	52.9-120	4.89	30	
Benzoic acid	105	20.0	ug/L	115	ND	91.3	38.2-120	30.40	30	*
2,4-Dichlorophenol	46.0	3.0	ug/L	65.0	ND	70.8	43.6-120	7.58	30	
1,2,4-Trichlorobenzene	16.0	1.0	ug/L	25.0	ND	63.9	28.6-120	6.56	30	
Naphthalene	17.1	1.0	ug/L	25.0	ND	68.3	40.5-120	7.32	30	
4-Chloroaniline	40.5	5.0	ug/L	65.0	ND	62.3	42.7-132	17.90	30	
Hexachlorobutadiene	16.2	3.0	ug/L	25.0	ND	64.9	32.3-120	8.57	30	
4-Chloro-3-Methylphenol	46.8	3.0	ug/L	65.0	ND	71.9	51.9-120	5.84	30	
2-Methylnaphthalene	17.8	1.0	ug/L	25.0	ND	71.2	47.3-120	5.30	30	
Hexachlorocyclopentadiene	22.0	5.0	ug/L	65.0	ND	33.8	23.3-120	32.60	30	*, Q
2,4,6-Trichlorophenol	47.1	3.0	ug/L	65.0	ND	72.5	47-120	7.04	30	
2,4,5-Trichlorophenol	46.8	5.0	ug/L	65.0	ND	72.0	48.4-120	5.65	30	
2-Chloronaphthalene	17.4	1.0	ug/L	25.0	ND	69.5	47.7-123	4.89	30	
2-Nitroaniline	46.4	3.0	ug/L	65.0	ND	71.4	56.8-120	6.61	30	
Dimethylphthalate	19.3	1.0	ug/L	25.0	ND	77.4	65.2-125	5.42	30	
Acenaphthylene	17.9	1.0	ug/L	25.0	ND	71.4	44.1-120	5.10	30	
2,6-Dinitrotoluene	49.5	3.0	ug/L	65.0	ND	76.1	69.3-140	3.95	30	
3-Nitroaniline	48.5	3.0	ug/L	65.0	ND	74.6	60.9-120	12.90	30	
Acenaphthene	18.0	1.0	ug/L	25.0	ND	72.2	50.4-120	5.06	30	
2,4-Dinitrophenol	83.1	20.0	ug/L	115	ND	72.2	33.7-183	25.90	30	
Dibenzofuran	19.3	1.0	ug/L	25.0	ND	77.0	49.9-120	5.47	30	
4-Nitrophenol	47.2	10.0	ug/L	65.0	ND	72.6	50.2-136	10.70	30	
2,4-Dinitrotoluene	50.3	3.0	ug/L	65.0	ND	77.4	66.8-132	5.93	30	
Fluorene	19.4	1.0	ug/L	25.0	ND	77.4	57.8-120	5.28	30	
Diethyl phthalate	21.7	1.0	ug/L	25.0	ND	86.8	68.1-120	5.03	30	
4-Chlorophenylphenyl ether	19.8	1.0	ug/L	25.0	ND	79.2	59.1-127	8.62	30	
4-Nitroaniline	55.2	3.0	ug/L	65.0	ND	84.9	56-122	11.00	30	



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0586 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLC0586-MSD1)										
		Source: 23C0512-06		Prepared: 27-Mar-2023		Analyzed: 29-Mar-2023 22:10				
4,6-Dinitro-2-methylphenol	81.3	10.0	ug/L	115	ND	70.7	37.9-162	20.50	30	
N-Nitrosodiphenylamine	18.2	1.0	ug/L	25.0	ND	72.8	59.6-120	5.62	30	
4-Bromophenyl phenyl ether	20.5	1.0	ug/L	25.0	ND	82.1	59.6-120	8.12	30	
Hexachlorobenzene	18.9	1.0	ug/L	25.0	ND	75.8	53.7-120	5.55	30	
Pentachlorophenol	51.5	10.0	ug/L	65.0	ND	79.3	40.3-128	8.28	30	
Phenanthrene	18.5	1.0	ug/L	25.0	ND	74.2	58.8-120	6.35	30	
Anthracene	16.8	1.0	ug/L	25.0	ND	67.4	60.5-120	6.64	30	
Carbazole	19.6	1.0	ug/L	25.0	ND	78.4	59.7-120	3.79	30	
Di-n-Butylphthalate	20.6	1.0	ug/L	25.0	ND	82.5	71-120	4.03	30	
Fluoranthene	20.3	1.0	ug/L	25.0	ND	81.3	66.7-120	4.40	30	
Pyrene	18.2	1.0	ug/L	25.0	ND	72.8	62.7-127	1.77	30	
Butylbenzylphthalate	20.0	1.0	ug/L	25.0	ND	80.0	67.4-128	0.57	30	
Benzo(a)anthracene	18.7	1.0	ug/L	25.0	ND	74.7	58.3-128	2.10	30	
3,3'-Dichlorobenzidine	40.4	5.0	ug/L	65.0	ND	62.2	34.1-120	37.90	30	*, Q
Chrysene	18.3	1.0	ug/L	25.0	ND	73.2	58.9-120	0.21	30	
bis(2-Ethylhexyl)phthalate	20.1	3.0	ug/L	25.0	ND	74.3	68.3-120	1.64	30	
Di-n-Octylphthalate	20.8	1.0	ug/L	25.0	ND	83.1	61.5-120	2.59	30	
Benzo(a)pyrene	18.8	1.0	ug/L	25.0	ND	75.2	70.6-120	2.56	30	
Indeno(1,2,3-cd)pyrene	17.7	1.0	ug/L	25.0	ND	70.8	46.5-120	3.24	30	
Dibenzo(a,h)anthracene	17.1	1.0	ug/L	25.0	ND	68.4	49.6-120	3.11	30	
Benzo(g,h,i)perylene	16.7	1.0	ug/L	25.0	ND	66.8	37-120	2.47	30	
Benzo(a)fluoranthene, Total	36.1	2.0	ug/L	50.0	ND	72.3	66.5-120	3.35	30	
1-Methylnaphthalene	19.1	1.0	ug/L	25.0	ND	76.5	46.9-120	5.33	30	
Surrogate: 2-Fluorophenol	23.8		ug/L	37.5	22.9	63.4	33-120			
Surrogate: Phenol-d5	26.7		ug/L	37.5	24.7	71.2	38-120			
Surrogate: 2-Chlorophenol-d4	26.8		ug/L	37.5	26.6	71.6	41-120			
Surrogate: 1,2-Dichlorobenzene-d4	16.8		ug/L	25.0	16.7	67.0	20-120			
Surrogate: Nitrobenzene-d5	18.0		ug/L	25.0	16.8	71.9	27-120			
Surrogate: 2-Fluorobiphenyl	18.3		ug/L	25.0	18.1	73.2	33-120			
Surrogate: 2,4,6-Tribromophenol	35.7		ug/L	37.5	34.5	95.3	52-120			Q
Surrogate: p-Terphenyl-d14	19.2		ug/L	25.0	20.4	76.7	28-120			

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



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLC0583 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0583-BLK1)				Prepared: 23-Mar-2023 Analyzed: 27-Mar-2023 20:26						
1,4-Dioxane	ND	0.4	ug/L							U
<i>Surrogate: 1,4-Dioxane-d8</i>	8.63		ug/L	10.0	86.3		33.6-120			
LCS (BLC0583-BS1)				Prepared: 23-Mar-2023 Analyzed: 27-Mar-2023 20:51						
1,4-Dioxane	7.7	0.4	ug/L	10.0	77.4		39.9-120			
<i>Surrogate: 1,4-Dioxane-d8</i>	8.99		ug/L	10.0	89.9		33.6-120			
LCS Dup (BLC0583-BSD1)				Prepared: 23-Mar-2023 Analyzed: 27-Mar-2023 21:16						
1,4-Dioxane	8.5	0.4	ug/L	10.0	85.3		39.9-120	9.80	30	
<i>Surrogate: 1,4-Dioxane-d8</i>	9.28		ug/L	10.0	92.8		33.6-120			
Matrix Spike (BLC0583-MS1)				Source: 23C0512-06		Prepared: 23-Mar-2023 Analyzed: 28-Mar-2023 00:10				
1,4-Dioxane	8.9	0.4	ug/L	10.0	1.9	69.8	35.1-120			
<i>Surrogate: 1,4-Dioxane-d8</i>	7.74		ug/L	10.0	7.74	77.4	33.6-120			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BLC0583-MSD1)				Source: 23C0512-06		Prepared: 23-Mar-2023 Analyzed: 28-Mar-2023 00:35				
1,4-Dioxane	9.6	0.4	ug/L	10.0	1.9	76.7	35.1-120	7.47	30	
<i>Surrogate: 1,4-Dioxane-d8</i>	8.47		ug/L	10.0	7.74	84.7	33.6-120			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										



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Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLC0582 - NWTPH-HCID

Instrument: FID4 Analyst: JR/VTS/JW

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0582-BLK1)		Prepared: 23-Mar-2023 Analyzed: 27-Mar-2023 14:59								
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
<i>Surrogate: o-Terphenyl</i>	0.194		mg/L	0.225	86.3		50-150			
<i>Surrogate: n-Triacontane</i>	0.225		mg/L	0.225	100		50-150			



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Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0587 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0587-BLK1)										
				Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 20:55				
alpha-BHC	ND	0.025	ug/L							U
beta-BHC	ND	0.025	ug/L							U
gamma-BHC (Lindane)	ND	0.025	ug/L							U
delta-BHC	ND	0.025	ug/L							U
Heptachlor	ND	0.025	ug/L							U
Aldrin	ND	0.025	ug/L							U
Heptachlor Epoxide	ND	0.050	ug/L							U
trans-Chlordane (beta-Chlordane)	ND	0.025	ug/L							U
cis-Chlordane (alpha-chlordane)	ND	0.025	ug/L							U
Endosulfan I	ND	0.025	ug/L							U
4,4'-DDE	ND	0.050	ug/L							U
Dieldrin	ND	0.050	ug/L							U
Endrin	ND	0.050	ug/L							U
Endosulfan II	ND	0.050	ug/L							U
4,4'-DDD	ND	0.050	ug/L							U
Endrin Aldehyde	ND	0.050	ug/L							U
4,4'-DDT	ND	0.050	ug/L							U
Endosulfan Sulfate	ND	0.050	ug/L							U
Endrin Ketone	ND	0.050	ug/L							U
Methoxychlor	ND	0.250	ug/L							U
Toxaphene	ND	1.25	ug/L							U
<i>Surrogate: Decachlorobiphenyl</i>	0.231		ug/L	0.400		57.7	11-144			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.262		ug/L	0.400		65.6	11-144			
<i>Surrogate: Tetrachlorometaxylene</i>	0.269		ug/L	0.400		67.3	30-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.268		ug/L	0.400		67.1	30-120			

LCS (BLC0587-BS1)										
				Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 21:13				
alpha-BHC	0.151	0.025	ug/L	0.200		75.3	54-124			
beta-BHC	0.155	0.025	ug/L	0.200		77.7	53-123			
gamma-BHC (Lindane)	0.156	0.025	ug/L	0.200		77.9	53-127			
delta-BHC	0.165	0.025	ug/L	0.200		82.3	53-122			
Heptachlor [2C]	0.140	0.025	ug/L	0.200		70.2	50-120			
Aldrin	0.135	0.025	ug/L	0.200		67.4	47-120			
Heptachlor Epoxide [2C]	0.156	0.050	ug/L	0.200		78.0	50-127			
trans-Chlordane (beta-Chlordane)	0.154	0.025	ug/L	0.200		77.1	47-127			



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Project: Landsburg
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Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0587 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0587-BS1)										
					Prepared: 24-Mar-2023	Analyzed: 30-Mar-2023 21:13				
cis-Chlordane (alpha-chlordane)	0.153	0.025	ug/L	0.200		76.7	51-132			
Endosulfan I	0.159	0.025	ug/L	0.200		79.3	48-137			
4,4'-DDE	0.306	0.050	ug/L	0.400		76.4	47-133			
Dieldrin	0.319	0.050	ug/L	0.400		79.7	55-130			
Endrin [2C]	0.358	0.050	ug/L	0.400		89.6	52-121			
Endosulfan II [2C]	0.320	0.050	ug/L	0.400		79.9	60-120			
4,4'-DDD [2C]	0.317	0.050	ug/L	0.400		79.1	60-120			
Endrin Aldehyde [2C]	0.255	0.050	ug/L	0.400		63.8	53-120			
4,4'-DDT [2C]	0.320	0.050	ug/L	0.400		80.0	57-122			
Endosulfan Sulfate [2C]	0.330	0.050	ug/L	0.400		82.5	56-120			
Endrin Ketone [2C]	0.339	0.050	ug/L	0.400		84.8	61-120			
Methoxychlor [2C]	1.59	0.250	ug/L	2.00		79.5	55-120			
<i>Surrogate: Decachlorobiphenyl</i>	0.264		ug/L	0.400		66.0	11-144			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.268		ug/L	0.400		66.9	11-144			
<i>Surrogate: Tetrachlorometaxylene</i>	0.261		ug/L	0.400		65.1	30-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.267		ug/L	0.400		66.7	30-120			
LCS Dup (BLC0587-BSD1)										
					Prepared: 24-Mar-2023	Analyzed: 30-Mar-2023 21:31				
alpha-BHC	0.153	0.025	ug/L	0.200		76.4	54-124	1.45	30	
beta-BHC [2C]	0.155	0.025	ug/L	0.200		77.6	53-123	3.47	30	
gamma-BHC (Lindane)	0.161	0.025	ug/L	0.200		80.4	53-127	3.14	30	
delta-BHC	0.176	0.025	ug/L	0.200		88.0	53-122	6.66	30	
Heptachlor	0.149	0.025	ug/L	0.200		74.6	50-120	6.73	30	
Aldrin	0.139	0.025	ug/L	0.200		69.5	47-120	3.00	30	
Heptachlor Epoxide	0.167	0.050	ug/L	0.200		83.3	50-127	6.89	30	
trans-Chlordane (beta-Chlordane)	0.164	0.025	ug/L	0.200		81.9	47-127	6.03	30	
cis-Chlordane (alpha-chlordane)	0.163	0.025	ug/L	0.200		81.4	51-132	5.87	30	
Endosulfan I	0.167	0.025	ug/L	0.200		83.7	48-137	5.44	30	
4,4'-DDE	0.329	0.050	ug/L	0.400		82.1	47-133	7.25	30	
Dieldrin	0.340	0.050	ug/L	0.400		85.0	55-130	6.37	30	
Endrin [2C]	0.370	0.050	ug/L	0.400		92.6	52-121	3.27	30	
Endosulfan II	0.348	0.050	ug/L	0.400		86.9	60-120	10.10	30	
4,4'-DDD [2C]	0.336	0.050	ug/L	0.400		83.9	60-120	5.90	30	
Endrin Aldehyde [2C]	0.274	0.050	ug/L	0.400		68.4	53-120	6.96	30	
4,4'-DDT [2C]	0.340	0.050	ug/L	0.400		85.0	57-122	5.96	30	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0587 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0587-BSD1)					Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 21:31					
Endosulfan Sulfate [2C]	0.349	0.050	ug/L	0.400		87.3	56-120	5.64	30	
Endrin Ketone [2C]	0.356	0.050	ug/L	0.400		88.9	61-120	4.72	30	
Methoxychlor [2C]	1.69	0.250	ug/L	2.00		84.5	55-120	6.15	30	
Surrogate: Decachlorobiphenyl	0.221		ug/L	0.400		55.3	11-144			
Surrogate: Decachlorobiphenyl [2C]	0.246		ug/L	0.400		61.4	11-144			
Surrogate: Tetrachlorometaxylene	0.289		ug/L	0.400		72.3	30-120			
Surrogate: Tetrachlorometaxylene [2C]	0.301		ug/L	0.400		75.2	30-120			

Matrix Spike (BLC0587-MS1)		Source: 23C0512-06		Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 21:50						
alpha-BHC	0.175	0.025	ug/L	0.200	ND	87.5	54-124			
beta-BHC	0.171	0.025	ug/L	0.200	ND	85.5	53-123			
gamma-BHC (Lindane)	0.168	0.025	ug/L	0.200	ND	84.0	53-127			
delta-BHC	0.165	0.025	ug/L	0.200	ND	82.5	53-122			
Heptachlor	0.150	0.025	ug/L	0.200	ND	75.0	50-120			
Aldrin	0.145	0.025	ug/L	0.200	ND	72.5	47-120			
Heptachlor Epoxide	0.161	0.050	ug/L	0.200	ND	80.5	50-127			
trans-Chlordane (beta-Chlordane)	0.162	0.025	ug/L	0.200	ND	81.0	47-127			
cis-Chlordane (alpha-chlordane)	0.161	0.025	ug/L	0.200	ND	80.5	51-132			
Endosulfan I	0.163	0.025	ug/L	0.200	ND	81.5	48-137			
4,4'-DDE	0.325	0.050	ug/L	0.400	ND	81.3	47-133			
Dieldrin	0.331	0.050	ug/L	0.400	ND	82.8	55-130			
Endrin	0.322	0.050	ug/L	0.400	ND	80.5	52-121			
Endosulfan II	0.343	0.050	ug/L	0.400	ND	85.8	60-120			
4,4'-DDD	0.329	0.050	ug/L	0.400	ND	82.2	60-120			
Endrin Aldehyde	0.275	0.050	ug/L	0.400	ND	68.6	53-120			
4,4'-DDT	0.328	0.050	ug/L	0.400	ND	82.0	57-122			
Endosulfan Sulfate	0.334	0.050	ug/L	0.400	ND	83.6	56-120			
Endrin Ketone	0.331	0.050	ug/L	0.400	ND	82.8	61-120			
Methoxychlor	1.57	0.250	ug/L	2.00	ND	78.5	55-120			
Surrogate: Decachlorobiphenyl	0.329		ug/L	0.400		82.3	11-144			
Surrogate: Decachlorobiphenyl [2C]	0.347		ug/L	0.400		86.7	11-144			
Surrogate: Tetrachlorometaxylene	0.280		ug/L	0.400		70.0	30-120			
Surrogate: Tetrachlorometaxylene [2C]	0.297		ug/L	0.400		74.3	30-120			

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



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Project: Landsburg
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03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0587 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BLC0587-MSD1)										
		Source: 23C0512-06		Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 22:08				
alpha-BHC	0.155	0.025	ug/L	0.200	ND	77.5	54-124	12.30	30	
beta-BHC	0.159	0.025	ug/L	0.200	ND	79.5	53-123	7.59	30	
gamma-BHC (Lindane)	0.156	0.025	ug/L	0.200	ND	78.0	53-127	7.88	30	
delta-BHC	0.160	0.025	ug/L	0.200	ND	80.0	53-122	3.25	30	
Heptachlor	0.146	0.025	ug/L	0.200	ND	73.0	50-120	2.53	30	
Aldrin	0.147	0.025	ug/L	0.200	ND	73.5	47-120	0.82	30	
Heptachlor Epoxide	0.151	0.050	ug/L	0.200	ND	75.5	50-127	6.01	30	
trans-Chlordane (beta-Chlordane)	0.156	0.025	ug/L	0.200	ND	78.0	47-127	4.30	30	
cis-Chlordane (alpha-chlordane)	0.153	0.025	ug/L	0.200	ND	76.5	51-132	4.72	30	
Endosulfan I	0.156	0.025	ug/L	0.200	ND	78.0	48-137	4.62	30	
4,4'-DDE	0.313	0.050	ug/L	0.400	ND	78.3	47-133	3.77	30	
Dieldrin	0.316	0.050	ug/L	0.400	ND	79.0	55-130	4.48	30	
Endrin	0.299	0.050	ug/L	0.400	ND	74.7	52-121	7.45	30	
Endosulfan II	0.323	0.050	ug/L	0.400	ND	80.8	60-120	5.90	30	
4,4'-DDD	0.306	0.050	ug/L	0.400	ND	76.5	60-120	7.22	30	
Endrin Aldehyde	0.267	0.050	ug/L	0.400	ND	66.7	53-120	2.93	30	
4,4'-DDT	0.307	0.050	ug/L	0.400	ND	76.7	57-122	6.73	30	
Endosulfan Sulfate	0.313	0.050	ug/L	0.400	ND	78.3	56-120	6.46	30	
Endrin Ketone	0.308	0.050	ug/L	0.400	ND	77.1	61-120	7.12	30	
Methoxychlor	1.48	0.250	ug/L	2.00	ND	73.9	55-120	6.04	30	
Surrogate: Decachlorobiphenyl	0.344		ug/L	0.400		86.0	11-144			
Surrogate: Decachlorobiphenyl [2C]	0.349		ug/L	0.400		87.2	11-144			
Surrogate: Tetrachlorometaxylene	0.284		ug/L	0.400		71.1	30-120			
Surrogate: Tetrachlorometaxylene [2C]	0.294		ug/L	0.400		73.6	30-120			

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



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BLC0588 - EPA 8082A

Instrument: ECD7 Analyst: RJL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0588-BLK1)										
					Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 09:56			
Aroclor 1016	ND	0.010	ug/L							U
Aroclor 1221	ND	0.010	ug/L							U
Aroclor 1232	ND	0.010	ug/L							U
Aroclor 1242	ND	0.010	ug/L							U
Aroclor 1248	ND	0.010	ug/L							U
Aroclor 1254	ND	0.010	ug/L							U
Aroclor 1260	ND	0.010	ug/L							U
Surrogate: Decachlorobiphenyl	0.0126		ug/L	0.0200	63.0		29-120			
Surrogate: Tetrachlorometaxylyene	0.0136		ug/L	0.0200	67.8		32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0127		ug/L	0.0200	63.7		29-120			
Surrogate: Tetrachlorometaxylyene [2C]	0.0123		ug/L	0.0200	61.6		32-120			
LCS (BLC0588-BS1)										
					Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 10:17			
Aroclor 1016 [2C]	0.037	0.010	ug/L	0.0500	74.6		54-120			
Aroclor 1260	0.037	0.010	ug/L	0.0500	74.5		51-128			
Surrogate: Decachlorobiphenyl	0.0119		ug/L	0.0200	59.7		29-120			
Surrogate: Tetrachlorometaxylyene	0.0128		ug/L	0.0200	63.9		32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0119		ug/L	0.0200	59.7		29-120			
Surrogate: Tetrachlorometaxylyene [2C]	0.0118		ug/L	0.0200	59.2		32-120			
LCS Dup (BLC0588-BSD1)										
					Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 10:38			
Aroclor 1016	0.039	0.010	ug/L	0.0500	77.4		54-120	4.06	30	
Aroclor 1260	0.039	0.010	ug/L	0.0500	77.3		51-128	3.70	30	
Surrogate: Decachlorobiphenyl	0.0115		ug/L	0.0200	57.3		29-120			
Surrogate: Tetrachlorometaxylyene	0.0126		ug/L	0.0200	62.9		32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0115		ug/L	0.0200	57.3		29-120			
Surrogate: Tetrachlorometaxylyene [2C]	0.0113		ug/L	0.0200	56.4		32-120			
Matrix Spike (BLC0588-MS1)										
		Source: 23C0512-06		Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 13:04				
Aroclor 1016	0.040	0.010	ug/L	0.0500	ND	80.0	54-120			
Aroclor 1260	0.035	0.010	ug/L	0.0500	ND	70.0	51-128			
Surrogate: Decachlorobiphenyl	0.0135		ug/L	0.0200	67.5		29-120			
Surrogate: Tetrachlorometaxylyene	0.0124		ug/L	0.0200	61.9		32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0137		ug/L	0.0200	68.4		29-120			



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Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BLC0588 - EPA 8082A

Instrument: ECD7 Analyst: RJL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLC0588-MS1)		Source: 23C0512-06		Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 13:04				
Surrogate: Tetrachlorometaxylene [2C]	0.0116		ug/L	0.0200		57.9	32-120			

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

Matrix Spike Dup (BLC0588-MSD1)		Source: 23C0512-06		Prepared: 24-Mar-2023		Analyzed: 30-Mar-2023 13:25				
Aroclor 1016	0.036	0.010	ug/L	0.0500	ND	72.0	54-120	8.87	30	
Aroclor 1260	0.035	0.010	ug/L	0.0500	ND	70.0	51-128	0.19	30	
Surrogate: Decachlorobiphenyl	0.0128		ug/L	0.0200		63.8	29-120			
Surrogate: Tetrachlorometaxylene	0.0116		ug/L	0.0200		58.2	32-120			
Surrogate: Decachlorobiphenyl [2C]	0.0129		ug/L	0.0200		64.4	29-120			
Surrogate: Tetrachlorometaxylene [2C]	0.0108		ug/L	0.0200		54.1	32-120			

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



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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLC0855 - 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 (BLC0855-BLK1)					Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:41					
Mercury	ND	0.00100	mg/L							U
LCS (BLC0855-BS1)					Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:43					
Mercury	0.00181	0.00100	mg/L	0.00200		90.7	80-120			
Duplicate (BLC0855-DUP1)					Source: 23C0512-06 Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:48					
Mercury	ND	0.00100	mg/L		ND					U
Matrix Spike (BLC0855-MS1)					Source: 23C0512-06 Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:50					
Mercury	ND	0.00100	mg/L	0.00100	ND	90.8	75-125			U

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

Matrix Spike Dup (BLC0855-MSD1)					Source: 23C0512-06 Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:53					
Mercury	ND	0.00100	mg/L	0.00100	ND	92.2	75-125			U

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



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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0067 - EPA 200.8

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BLD0067-DUP4)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 26-Apr-2023 04:25			
Thallium	205	ND	0.00200	mg/L		ND					U

Matrix Spike (BLD0067-MS4)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 26-Apr-2023 04:30			
Thallium	205	0.0245	0.00200	mg/L	0.0250	ND	98.0	75-125			

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

Matrix Spike Dup (BLD0067-MSD4)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 26-Apr-2023 04:37			
Thallium	205	0.0235	0.00200	mg/L	0.0250	ND	94.2	75-125	4.00	20	

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

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0067-BLK1)						Prepared: 04-Apr-2023		Analyzed: 04-Apr-2023 18:35			
Lead	208	ND	0.0100	mg/L							U
Arsenic	75a	ND	0.00300	mg/L							U
Selenium	78	ND	0.0250	mg/L							U

Blank (BLD0067-BLK3)						Prepared: 04-Apr-2023		Analyzed: 06-Apr-2023 19:09			
Antimony	121	ND	0.00300	mg/L							U
Thallium	205	ND	0.00200	mg/L							U

LCS (BLD0067-BS1)						Prepared: 04-Apr-2023		Analyzed: 04-Apr-2023 18:40			
Lead	208	0.0258	0.0100	mg/L	0.0250		103	80-120			
Arsenic	75a	0.0247	0.00300	mg/L	0.0250		99.0	80-120			
Selenium	78	0.0773	0.0250	mg/L	0.0800		96.7	80-120			

LCS (BLD0067-BS3)						Prepared: 04-Apr-2023		Analyzed: 06-Apr-2023 19:14			
Antimony	121	0.0257	0.00300	mg/L	0.0250		103	80-120			
Thallium	205	0.0255	0.00200	mg/L	0.0250		102	80-120			

Duplicate (BLD0067-DUP1)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 04-Apr-2023 20:17			
Lead	208	ND	0.0100	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					U
Selenium	78	ND	0.0250	mg/L		ND					U



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:28
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0067 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Duplicate (BLD0067-DUP3)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 07-Apr-2023 01:35			
Antimony	121	ND	0.00300	mg/L		ND					U

Matrix Spike (BLD0067-MS1)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 04-Apr-2023 20:22			
Lead	208	0.0233	0.0100	mg/L	0.0250	ND	93.2	75-125			
Arsenic	75a	0.0243	0.00300	mg/L	0.0250	ND	97.0	75-125			
Selenium	78	0.0745	0.0250	mg/L	0.0800	ND	93.1	75-125			

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

Matrix Spike (BLD0067-MS3)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 07-Apr-2023 01:40			
Antimony	121	0.0248	0.00300	mg/L	0.0250	ND	99.3	75-125			

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

Matrix Spike Dup (BLD0067-MSD1)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 04-Apr-2023 20:27			
Lead	208	0.0226	0.0100	mg/L	0.0250	ND	90.6	75-125	2.83	20	
Arsenic	75a	0.0238	0.00300	mg/L	0.0250	ND	95.3	75-125	1.79	20	
Selenium	78	0.0716	0.0250	mg/L	0.0800	ND	89.5	75-125	3.96	20	

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

Matrix Spike Dup (BLD0067-MSD3)			Source: 23C0512-06			Prepared: 04-Apr-2023		Analyzed: 07-Apr-2023 01:45			
Antimony	121	0.0247	0.00300	mg/L	0.0250	ND	98.7	75-125	0.67	20	

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



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0144 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0144-BLK1)										
Prepared: 06-Apr-2023 Analyzed: 11-Apr-2023 08:58										
Aluminum	ND	1.00	mg/L							U
Barium	ND	0.500	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Calcium	ND	0.500	mg/L							U
Chromium	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							U
Magnesium	ND	0.500	mg/L							U
Manganese	ND	0.0100	mg/L							U
Nickel	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

Blank (BLD0144-BLK2)										
Prepared: 06-Apr-2023 Analyzed: 27-Apr-2023 13:05										
Cobalt	ND	0.0100	mg/L							U
Iron	ND	0.200	mg/L							U
Zinc	ND	0.0200	mg/L							U

LCS (BLD0144-BS1)										
Prepared: 06-Apr-2023 Analyzed: 11-Apr-2023 09:01										
Aluminum	2.15	1.00	mg/L	2.00		108	80-120			
Barium	2.10	0.500	mg/L	2.00		105	80-120			
Beryllium	0.534	0.0100	mg/L	0.500		107	80-120			
Cadmium	0.529	0.0020	mg/L	0.500		106	80-120			
Calcium	10.7	0.500	mg/L	10.0		107	80-120			
Chromium	0.515	0.0100	mg/L	0.500		103	80-120			
Copper	0.520	0.0030	mg/L	0.500		104	80-120			
Iron	2.12	0.200	mg/L	2.00		106	80-120			
Magnesium	9.94	0.500	mg/L	10.0		99.4	80-120			
Manganese	0.537	0.0100	mg/L	0.500		107	80-120			
Nickel	0.527	0.0100	mg/L	0.500		105	80-120			
Potassium	10.5	0.500	mg/L	10.0		105	80-120			
Silver	0.544	0.0050	mg/L	0.500		109	80-120			
Sodium	10.6	0.500	mg/L	10.0		106	80-120			



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:28
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0144 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLD0144-BS1)		Prepared: 06-Apr-2023 Analyzed: 11-Apr-2023 09:01								
Vanadium	0.534	0.0030	mg/L	0.500		107	80-120			
Zinc	0.532	0.0200	mg/L	0.500		106	80-120			
LCS (BLD0144-BS2)		Prepared: 06-Apr-2023 Analyzed: 27-Apr-2023 13:08								
Cobalt	0.517	0.0100	mg/L	0.500		103	80-120			
Duplicate (BLD0144-DUP1)		Source: 23C0512-06		Prepared: 06-Apr-2023 Analyzed: 11-Apr-2023 09:18						
Aluminum	ND	1.00	mg/L		ND					U
Barium	ND	0.500	mg/L		ND					U
Beryllium	ND	0.0100	mg/L		ND					U
Cadmium	ND	0.0020	mg/L		ND					U
Calcium	114	0.500	mg/L		120			5.67	20	
Chromium	ND	0.0100	mg/L		ND					U
Copper	ND	0.0030	mg/L		ND					U
Iron	0.675	0.200	mg/L		0.714			5.70	20	
Magnesium	66.3	0.500	mg/L		70.1			5.62	20	
Manganese	0.192	0.0100	mg/L		0.204			6.02	20	
Nickel	ND	0.0100	mg/L		ND					U
Potassium	3.54	0.500	mg/L		3.78			6.70	20	
Silver	ND	0.0050	mg/L		ND					U
Sodium	21.1	0.500	mg/L		22.4			5.90	20	
Vanadium	ND	0.0030	mg/L		ND					U
Zinc	ND	0.0200	mg/L		ND					U
Duplicate (BLD0144-DUP2)		Source: 23C0512-06		Prepared: 06-Apr-2023 Analyzed: 27-Apr-2023 13:25						
Cobalt	ND	0.0100	mg/L		ND					U
Matrix Spike (BLD0144-MS1)		Source: 23C0512-06		Prepared: 06-Apr-2023 Analyzed: 11-Apr-2023 09:21						
Aluminum	2.15	1.00	mg/L	2.00	ND	108	75-125			
Barium	2.45	0.500	mg/L	2.00	ND	102	75-125			
Beryllium	0.533	0.0100	mg/L	0.500	ND	107	75-125			
Cadmium	0.514	0.0020	mg/L	0.500	ND	103	75-125			
Calcium	120	0.500	mg/L	10.0	120	-1.51	75-125			HC
Chromium	0.505	0.0100	mg/L	0.500	ND	101	75-125			
Copper	0.523	0.0030	mg/L	0.500	ND	105	75-125			
Iron	2.70	0.200	mg/L	2.00	0.714	99.3	75-125			



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:28

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0144 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLD0144-MS1)										
		Source: 23C0512-06		Prepared: 06-Apr-2023		Analyzed: 11-Apr-2023 09:21				
Magnesium	72.1	0.500	mg/L	10.0	70.1	19.5	75-125			HC
Manganese	0.710	0.0100	mg/L	0.500	0.204	101	75-125			
Nickel	0.506	0.0100	mg/L	0.500	ND	101	75-125			
Potassium	14.1	0.500	mg/L	10.0	3.78	103	75-125			
Silver	0.546	0.0050	mg/L	0.500	ND	109	75-125			
Sodium	30.9	0.500	mg/L	10.0	22.4	85.4	75-125			
Vanadium	0.533	0.0030	mg/L	0.500	ND	107	75-125			
Zinc	0.526	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 (BLD0144-MS2)										
		Source: 23C0512-06		Prepared: 06-Apr-2023		Analyzed: 27-Apr-2023 13:28				
Cobalt	0.500	0.0100	mg/L	0.500	ND	100	75-125			

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

Matrix Spike Dup (BLD0144-MSD1)										
		Source: 23C0512-06		Prepared: 06-Apr-2023		Analyzed: 11-Apr-2023 09:24				
Aluminum	2.11	1.00	mg/L	2.00	ND	106	75-125	1.84	20	
Barium	2.44	0.500	mg/L	2.00	ND	102	75-125	0.66	20	
Beryllium	0.519	0.0100	mg/L	0.500	ND	104	75-125	2.62	20	
Cadmium	0.500	0.0020	mg/L	0.500	ND	99.9	75-125	2.80	20	
Calcium	126	0.500	mg/L	10.0	120	52.1	75-125	4.37	20	HC
Chromium	0.492	0.0100	mg/L	0.500	ND	98.4	75-125	2.67	20	
Copper	0.510	0.0030	mg/L	0.500	ND	102	75-125	2.48	20	
Iron	2.67	0.200	mg/L	2.00	0.714	98.0	75-125	0.98	20	
Magnesium	74.5	0.500	mg/L	10.0	70.1	43.4	75-125	3.26	20	HC
Manganese	0.709	0.0100	mg/L	0.500	0.204	101	75-125	0.24	20	
Nickel	0.492	0.0100	mg/L	0.500	ND	98.4	75-125	2.89	20	
Potassium	14.2	0.500	mg/L	10.0	3.78	104	75-125	0.55	20	
Silver	0.532	0.0050	mg/L	0.500	ND	106	75-125	2.56	20	
Sodium	31.8	0.500	mg/L	10.0	22.4	93.9	75-125	2.71	20	
Vanadium	0.520	0.0030	mg/L	0.500	ND	104	75-125	2.47	20	

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

Matrix Spike Dup (BLD0144-MSD2)										
		Source: 23C0512-06		Prepared: 06-Apr-2023		Analyzed: 27-Apr-2023 13:31				
Cobalt	0.491	0.0100	mg/L	0.500	ND	98.2	75-125	1.80	20	
Zinc	0.486	0.0200	mg/L	0.500	ND	94.8	75-125	7.89	20	



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Project Manager: Gary Zimmerman

Reported:
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0144 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Matrix Spike Dup (BLD0144-MSD2) **Source: 23C0512-06** Prepared: 06-Apr-2023 Analyzed: 27-Apr-2023 13:31

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



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Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 200.8 in Water</i>	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
<i>EPA 200.8 UCT-KED in Water</i>	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
<i>EPA 6010D in Water</i>	
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
<i>EPA 7470A in Water</i>	
Mercury	WADOE,NELAP,DoD-ELAP
<i>EPA 8081B in Water</i>	
alpha-BHC	DoD-ELAP,NELAP,WADOE



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alpha-BHC [2C]	DoD-ELAP,NELAP,WADOE
beta-BHC	DoD-ELAP,NELAP,WADOE
beta-BHC [2C]	DoD-ELAP,NELAP,WADOE
gamma-BHC (Lindane)	DoD-ELAP,NELAP,WADOE
gamma-BHC (Lindane) [2C]	DoD-ELAP,NELAP,WADOE
delta-BHC	DoD-ELAP,NELAP,WADOE
delta-BHC [2C]	DoD-ELAP,NELAP,WADOE
Heptachlor	DoD-ELAP,NELAP,WADOE
Heptachlor [2C]	DoD-ELAP,NELAP,WADOE
Aldrin	DoD-ELAP,NELAP,WADOE
Aldrin [2C]	DoD-ELAP,NELAP,WADOE
Heptachlor Epoxide	DoD-ELAP,NELAP,WADOE
Heptachlor Epoxide [2C]	DoD-ELAP,NELAP,WADOE
trans-Chlordane (beta-Chlordane)	DoD-ELAP,NELAP,WADOE
trans-Chlordane (beta-Chlordane)	DoD-ELAP,NELAP,WADOE
cis-Chlordane (alpha-chlordane)	DoD-ELAP,NELAP,WADOE
cis-Chlordane (alpha-chlordane)	DoD-ELAP,NELAP,WADOE
Endosulfan I	DoD-ELAP,NELAP,WADOE
Endosulfan I [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDE	DoD-ELAP,NELAP,WADOE
4,4'-DDE [2C]	DoD-ELAP,NELAP,WADOE
Dieldrin	DoD-ELAP,NELAP,WADOE
Dieldrin [2C]	DoD-ELAP,NELAP,WADOE
Endrin	DoD-ELAP,NELAP,WADOE
Endrin [2C]	DoD-ELAP,NELAP,WADOE
Endosulfan II	DoD-ELAP,NELAP,WADOE
Endosulfan II [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDD	DoD-ELAP,NELAP,WADOE
4,4'-DDD [2C]	DoD-ELAP,NELAP,WADOE
Endrin Aldehyde	DoD-ELAP,NELAP,WADOE
Endrin Aldehyde [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDT	DoD-ELAP,NELAP,WADOE
4,4'-DDT [2C]	DoD-ELAP,NELAP,WADOE



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Endosulfan Sulfate	DoD-ELAP,NELAP,WADOE
Endosulfan Sulfate [2C]	DoD-ELAP,NELAP,WADOE
Endrin Ketone	DoD-ELAP,NELAP,WADOE
Endrin Ketone [2C]	DoD-ELAP,NELAP,WADOE
Methoxychlor	DoD-ELAP,NELAP,WADOE
Methoxychlor [2C]	DoD-ELAP,NELAP,WADOE
Toxaphene	DoD-ELAP,NELAP,WADOE
Toxaphene [2C]	DoD-ELAP,NELAP,WADOE

EPA 8082A in Water

Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroeth	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE



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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



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Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE

EPA 8270E in Water

Phenol	WADOE,DoD-ELAP,NELAP
bis(2-chloroethyl) ether	WADOE,DoD-ELAP,NELAP
2-Chlorophenol	WADOE,DoD-ELAP,NELAP



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1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
Benzyl Alcohol	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
2-Methylphenol	WADOE,DoD-ELAP,NELAP
2,2'-Oxybis(1-chloropropane)	DoD-ELAP
4-Methylphenol	WADOE,DoD-ELAP,NELAP
N-Nitroso-di-n-Propylamine	WADOE,DoD-ELAP,NELAP
Hexachloroethane	WADOE,DoD-ELAP,NELAP
Nitrobenzene	WADOE,DoD-ELAP,NELAP
Isophorone	WADOE,DoD-ELAP,NELAP
2-Nitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dimethylphenol	WADOE,DoD-ELAP,NELAP
Bis(2-Chloroethoxy)methane	WADOE,DoD-ELAP,NELAP
Benzoic acid	WADOE,DoD-ELAP,NELAP
2,4-Dichlorophenol	WADOE,DoD-ELAP,NELAP
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP
Naphthalene	WADOE,ADEC,DoD-ELAP,NELAP
4-Chloroaniline	WADOE,DoD-ELAP,NELAP
Hexachlorobutadiene	WADOE,DoD-ELAP,NELAP
4-Chloro-3-Methylphenol	WADOE,DoD-ELAP,NELAP
2-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP
Hexachlorocyclopentadiene	WADOE,DoD-ELAP,NELAP
2,4,6-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2,4,5-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2-Chloronaphthalene	WADOE,DoD-ELAP,NELAP
2-Nitroaniline	WADOE,DoD-ELAP,NELAP
Dimethylphthalate	WADOE,DoD-ELAP,NELAP
Acenaphthylene	WADOE,ADEC,DoD-ELAP,NELAP
2,6-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
3-Nitroaniline	WADOE,DoD-ELAP,NELAP
Acenaphthene	WADOE,ADEC,DoD-ELAP,NELAP
2,4-Dinitrophenol	WADOE,DoD-ELAP,NELAP



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Dibenzofuran	WADOE,ADEC,DoD-ELAP,NELAP
4-Nitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
Fluorene	WADOE,ADEC,DoD-ELAP,NELAP
Diethyl phthalate	WADOE,DoD-ELAP,NELAP
4-Chlorophenylphenyl ether	WADOE,DoD-ELAP,NELAP
4-Nitroaniline	WADOE,DoD-ELAP,NELAP
4,6-Dinitro-2-methylphenol	WADOE,DoD-ELAP,NELAP
N-Nitrosodiphenylamine	DoD-ELAP
4-Bromophenyl phenyl ether	WADOE,DoD-ELAP,NELAP
Hexachlorobenzene	WADOE,DoD-ELAP,NELAP
Pentachlorophenol	WADOE,DoD-ELAP,NELAP
Phenanthrene	WADOE,ADEC,DoD-ELAP,NELAP
Anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Carbazole	WADOE,ADEC,DoD-ELAP,NELAP
Di-n-Butylphthalate	WADOE,DoD-ELAP,NELAP
Fluoranthene	WADOE,ADEC,DoD-ELAP,NELAP
Pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Butylbenzylphthalate	WADOE,DoD-ELAP,NELAP
Benzo(a)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
3,3'-Dichlorobenzidine	DoD-ELAP
Chrysene	WADOE,ADEC,DoD-ELAP,NELAP
bis(2-Ethylhexyl)phthalate	WADOE,DoD-ELAP,NELAP
Di-n-Octylphthalate	WADOE,DoD-ELAP,NELAP
Benzo(a)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Indeno(1,2,3-cd)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Dibenzo(a,h)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(g,h,i)perylene	WADOE,ADEC,DoD-ELAP,NELAP
Benzofluoranthenes, Total	WADOE,ADEC,DoD-ELAP,NELAP
1-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP

EPA 8270E-SIM in Water

1,4-Dioxane	WADOE,NELAP,DoD-ELAP
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NWTPH-HCID in Water



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Gasoline Range Organics (Tol-C	NELAP,DoD-ELAP,WADOE
Diesel Range Organics (C12-C2	NELAP,DoD-ELAP,WADOE
Motor Oil Range Organics (C24-	NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023



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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)
- 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.
- L Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to \pm RL instead of 20% RPD
- M Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
- P1 The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
- 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
Tukwila, WA

03 May 2023

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

RE: Landsburg (GL9231000007.2021)

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

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

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

Associated Work Order(s)
23C0539

Associated SDG ID(s)
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 enclosed 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.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2360539	Turn-around Requested: Standard	Date: 3/22/23
ARI Client Company: Golder	Phone: 425-883-0777	Page: 1 of 1
Client Contact: Gary Zimmerman/Autumn Pearson		No. of Coolers: Cooler Temps:



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

Client Project Name: Landsburg 2023-03 Sampling					Analysis Requested								Notes/Comments Analyze in accordance with MSA between Golder and ARI Ecology EIM EDD
Client Project #: GL9231000007.2021		Samplers: AP+DD+BM			VOCs	1,4-Dioxane	Total Priority Metal	TPH-HCID (NWTPH)	TPH-DX + TPH-Gx (HOLD)	PCBs (8082A)	Organochlorine Pesticides (8081B)	SVOCs (8270E)	
Sample ID	Date	Time	Matrix	No. Containers									
LMW-9-0323	3/22/23	10:15	W	18	X	X	X	X	X	X	X	X	
LMW-3-0323	↓	11:48	↓	18	X	X	X	X	X	X	X	X	
LMW-5-0323	↓	13:20	↓	18	X	X	X	X	X	X	X	X	
LMW-8-0323	↓	14:30	↓	18	X	X	X	X	X	X	X	X	
LMW-FB-0323	↓	14:45	↓	18	X	X	X	X	X	X	X	X	
TRIP BLANK	—	—	↓	3	X								
Comments/Special Instructions HOLD TPH FOLLOW-UPS. CLIENT SPECIFIC RLs/Analyte List					Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) <i>[Signature]</i>		Relinquished by: (Signature)		Received by: (Signature)		
					Printed Name: Daniel Devine		Printed Name: Rowan		Printed Name:		Printed Name:		
					Company: WSR		Company: ARI		Company:		Company:		
					Date & Time: 2/22/23 4:14 PM		Date & Time: 2/22/23 1614		Date & Time:		Date & Time:		

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

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LMW-9-0323	23C0539-01	Water	22-Mar-2023 10:15	23-Mar-2023 16:14
LMW-3-0323	23C0539-02	Water	22-Mar-2023 11:48	23-Mar-2023 16:14
LMW-5-0323	23C0539-03	Water	22-Mar-2023 13:20	23-Mar-2023 16:14
LMW-8-0323	23C0539-04	Water	22-Mar-2023 14:30	23-Mar-2023 16:14
LMW-FB-0323	23C0539-05	Water	22-Mar-2023 14:45	23-Mar-2023 16:14
Trip Blank	23C0539-06	Water	22-Mar-2023 10:15	23-Mar-2023 16:14



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Work Order Case Narrative

Pesticides - EPA Method SW8081B

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.

PCB Aroclors - EPA Method SW8082A

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.

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 high in the CCAL and bromoform is out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

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



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Project Manager: Gary Zimmerman

Reported:

03-May-2023 08:14

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits with the exception of analytes flagged on the associated forms.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and 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 high in the CCAL and hexachlorocyclopentadiene is out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

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

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

1,4-Dioxane- EPA Method SW8270E

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

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

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

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

Total Metals - EPA Method 200.8, 6010 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.



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03-May-2023 08:14

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.



WORK ORDER

23C0539

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: GL9231000007.2021

Preservation Confirmation

Container ID	Container Type	pH
23C0539-01 A	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
23C0539-01 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-01 C	VOA Vial, Clear, 40 mL, HCL	
23C0539-01 D	VOA Vial, Clear, 40 mL, HCL	
23C0539-01 E	VOA Vial, Clear, 40 mL, HCL	
23C0539-01 F	VOA Vial, Clear, 40 mL, HCL	
23C0539-01 G	Glass NM, Amber, 1000 mL	
23C0539-01 H	Glass NM, Amber, 1000 mL	
23C0539-01 I	Glass NM, Amber, 1000 mL	
23C0539-01 J	Glass NM, Amber, 1000 mL	
23C0539-01 K	Glass NM, Amber, 1000 mL	
23C0539-01 L	Glass NM, Amber, 1000 mL	
23C0539-01 M	Glass NM, Amber, 500 mL	
23C0539-01 N	Glass NM, Amber, 500 mL	
23C0539-01 O	Glass NM, Amber, 500 mL	
23C0539-01 P	Glass NM, Amber, 500 mL	
23C0539-01 Q	Glass NM, Amber, 500 mL	
23C0539-01 R	Glass NM, Amber, 500 mL	
23C0539-02 A	HDPE NM, 500 mL, 1:1 HNO3	12 Pass
23C0539-02 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-02 C	VOA Vial, Clear, 40 mL, HCL	
23C0539-02 D	VOA Vial, Clear, 40 mL, HCL	
23C0539-02 E	VOA Vial, Clear, 40 mL, HCL	
23C0539-02 F	VOA Vial, Clear, 40 mL, HCL	
23C0539-02 G	Glass NM, Amber, 1000 mL	
23C0539-02 H	Glass NM, Amber, 1000 mL	
23C0539-02 I	Glass NM, Amber, 1000 mL	
23C0539-02 J	Glass NM, Amber, 1000 mL	
23C0539-02 K	Glass NM, Amber, 1000 mL	
23C0539-02 L	Glass NM, Amber, 1000 mL	
23C0539-02 M	Glass NM, Amber, 500 mL	
23C0539-02 N	Glass NM, Amber, 500 mL	
23C0539-02 O	Glass NM, Amber, 500 mL	
23C0539-02 P	Glass NM, Amber, 500 mL	



WORK ORDER

23C0539

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: GL9231000007.2021

23C0539-02 Q	Glass NM, Amber, 500 mL	
23C0539-02 R	Glass NM, Amber, 500 mL	
23C0539-03 A	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
23C0539-03 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-03 C	VOA Vial, Clear, 40 mL, HCL	
23C0539-03 D	VOA Vial, Clear, 40 mL, HCL	
23C0539-03 E	VOA Vial, Clear, 40 mL, HCL	
23C0539-03 F	VOA Vial, Clear, 40 mL, HCL	
23C0539-03 G	Glass NM, Amber, 1000 mL	
23C0539-03 H	Glass NM, Amber, 1000 mL	
23C0539-03 I	Glass NM, Amber, 1000 mL	
23C0539-03 J	Glass NM, Amber, 1000 mL	
23C0539-03 K	Glass NM, Amber, 1000 mL	
23C0539-03 L	Glass NM, Amber, 1000 mL	
23C0539-03 M	Glass NM, Amber, 500 mL	
23C0539-03 N	Glass NM, Amber, 500 mL	
23C0539-03 O	Glass NM, Amber, 500 mL	
23C0539-03 P	Glass NM, Amber, 500 mL	
23C0539-03 Q	Glass NM, Amber, 500 mL	
23C0539-03 R	Glass NM, Amber, 500 mL	
23C0539-04 A	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
23C0539-04 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-04 C	VOA Vial, Clear, 40 mL, HCL	
23C0539-04 D	VOA Vial, Clear, 40 mL, HCL	
23C0539-04 E	VOA Vial, Clear, 40 mL, HCL	
23C0539-04 F	VOA Vial, Clear, 40 mL, HCL	
23C0539-04 G	Glass NM, Amber, 1000 mL	
23C0539-04 H	Glass NM, Amber, 1000 mL	
23C0539-04 I	Glass NM, Amber, 1000 mL	
23C0539-04 J	Glass NM, Amber, 1000 mL	
23C0539-04 K	Glass NM, Amber, 1000 mL	
23C0539-04 L	Glass NM, Amber, 1000 mL	
23C0539-04 M	Glass NM, Amber, 500 mL	
23C0539-04 N	Glass NM, Amber, 500 mL	
23C0539-04 O	Glass NM, Amber, 500 mL	
23C0539-04 P	Glass NM, Amber, 500 mL	



WORK ORDER

23C0539

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: GL9231000007.2021

23C0539-04 Q	Glass NM, Amber, 500 mL	
23C0539-04 R	Glass NM, Amber, 500 mL	
23C0539-05 A	HDPE NM, 500 mL, 1:1 HNO3	L2 Pass
23C0539-05 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-05 C	VOA Vial, Clear, 40 mL, HCL	
23C0539-05 D	VOA Vial, Clear, 40 mL, HCL	
23C0539-05 E	VOA Vial, Clear, 40 mL, HCL	
23C0539-05 F	VOA Vial, Clear, 40 mL, HCL	
23C0539-05 G	Glass NM, Amber, 1000 mL	
23C0539-05 H	Glass NM, Amber, 1000 mL	
23C0539-05 I	Glass NM, Amber, 1000 mL	
23C0539-05 J	Glass NM, Amber, 1000 mL	
23C0539-05 K	Glass NM, Amber, 1000 mL	
23C0539-05 L	Glass NM, Amber, 1000 mL	
23C0539-05 M	Glass NM, Amber, 500 mL	
23C0539-05 N	Glass NM, Amber, 500 mL	
23C0539-05 O	Glass NM, Amber, 500 mL	
23C0539-05 P	Glass NM, Amber, 500 mL	
23C0539-05 Q	Glass NM, Amber, 500 mL	
23C0539-05 R	Glass NM, Amber, 500 mL	
23C0539-06 A	VOA Vial, Clear, 40 mL, HCL	
23C0539-06 B	VOA Vial, Clear, 40 mL, HCL	
23C0539-06 C	VOA Vial, Clear, 40 mL, HCL	


Preservation Confirmed By


Date



Cooler Receipt Form

ARI Client: Bolder WSP

Project Name: Landsburg

COC No(s): _____ (NA)

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

Assigned ARI Job No: 2310539

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 1614 5.9 5.6 4.6 3.6 7.7

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

Cooler Accepted by: R Date: 2/22/27 Time: 1614

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)? YES NO PIB 3/22

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 9/31/12

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

Samples Logged by: [Signature] Date: 9/31/23 Time: 9:42 Labels checked by: TCS

**** 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:

Bubbles present in 02B 03B
Lab to determine size

By: [Signature] Date: 9/31/23



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-9-0323
23C0539-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 10:15

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:03

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-01 B

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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-9-0323
23C0539-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 10:15

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:03

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
4-Methyl-2-Pentanone	108-10-1	1	2.50	ND	ug/L	U
cis-1,3-Dichloropropene	10061-01-5	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
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
1,1,1,2-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



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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LMW-9-0323
23C0539-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/22/2023 10:15
Instrument: NT2 Analyst: LH Analyzed: 03/24/2023 12:03

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	122	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	105	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	88.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	102	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-9-0323
23C0539-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 10:15

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 16:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0628
Prepared: 03/28/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0539-01 N 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-9-0323
23C0539-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 10:15

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 16:25

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U

Surrogate: 2-Fluorophenol	33-120 %	91.8 %
Surrogate: Phenol-d5	38-120 %	94.3 %
Surrogate: 2-Chlorophenol-d4	41-120 %	102 %
Surrogate: 1,2-Dichlorobenzene-d4	20-120 %	95.9 %



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Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
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LMW-9-0323
23C0539-01 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 10:15

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 16:25

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	102	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	111	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	137	%	*, Q
Surrogate: p-Terphenyl-d14		28-120 %	117	%	



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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LMW-9-0323
23C0539-01 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/22/2023 10:15
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 23:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0539-01 O 01
Preparation Batch: BLC0629 Sample Size: 500 mL
Prepared: 03/29/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>90.1</i>	<i>%</i>	



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LMW-9-0323
23C0539-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/22/2023 10:15
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 14:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-01 M 01
Preparation Batch: BLC0627 Sample Size: 500 mL
Prepared: 03/24/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	86.9	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	93.5	%	



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LMW-9-0323
23C0539-01 (Water)

Chlorinated Pesticides

Method: EPA 8081B Sampled: 03/22/2023 10:15
Instrument: ECD6 Analyst: JGR Analyzed: 03/30/2023 19:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-01 P 01
Preparation Batch: BLC0630 Sample Size: 500 mL
Prepared: 03/24/2023 Final Volume: 5 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl	11-144 %	86.2	%
Surrogate: Decachlorobiphenyl [2C]	11-144 %	89.8	%
Surrogate: Tetrachlorometaxylene	30-120 %	74.1	%
Surrogate: Tetrachlorometaxylene [2C]	30-120 %	75.7	%



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LMW-9-0323
23C0539-01 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/22/2023 10:15
Instrument: ECD7 Analyst: RJL Analyzed: 03/31/2023 22:17

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0631 Prepared: 03/27/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0539-01 G 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0258 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-01 G 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0256 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-01 G 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0257 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-01 G 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	41.8	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	36.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	41.4	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	33.7	%	



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LMW-9-0323
23C0539-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/22/2023 10:15
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 03:48

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-01 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-9-0323
23C0539-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/22/2023 10:15
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 02:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-01 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-9-0323
23C0539-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/22/2023 10:15
Instrument: ICP3 Analyst: DOE Analyzed: 04/13/2023 13:07

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0539-01 A 02
Preparation Batch: BLD0254 Sample Size: 25 mL
Prepared: 04/11/2023 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	75.5	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	1.44	mg/L	
Magnesium	7439-95-4	1	0.500	39.8	mg/L	
Manganese	7439-96-5	1	0.0100	0.168	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.26	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	13.2	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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LMW-9-0323
23C0539-01 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/22/2023 10:15
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:28

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0539-01 A
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-3-0323
23C0539-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 11:48

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:23

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-02 B

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
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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-3-0323
23C0539-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 11:48

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:23

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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LMW-3-0323
23C0539-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 11:48

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:23

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	124	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	105	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	87.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



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LMW-3-0323
23C0539-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 11:48

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 16:58

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0628
Prepared: 03/28/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0539-02 N 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-3-0323
23C0539-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 11:48

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 16:58

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	85.1	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	85.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	92.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	89.7	%	



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LMW-3-0323
23C0539-02 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/22/2023 11:48
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 16:58

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	94.2	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	102	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	121	%	* , Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	107	%	



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LMW-3-0323
23C0539-02 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/22/2023 11:48
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 23:59

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0539-02 O 01
Preparation Batch: BLC0629 Sample Size: 500 mL
Prepared: 03/29/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>96.7</i>	<i>%</i>	



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LMW-3-0323
23C0539-02 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/22/2023 11:48
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 14:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-02 M 01
Preparation Batch: BLC0627 Sample Size: 500 mL
Prepared: 03/24/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	78.2	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	90.8	%	



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LMW-3-0323
23C0539-02 (Water)

Chlorinated Pesticides

Method: EPA 8081B

Sampled: 03/22/2023 11:48

Instrument: ECD6 Analyst: JGR

Analyzed: 03/30/2023 19:42

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BLC0630
Prepared: 03/24/2023

Sample Size: 500 mL
Final Volume: 5 mL

Extract ID: 23C0539-02 P 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl

11-144 % 70.0 %

Surrogate: Decachlorobiphenyl [2C]

11-144 % 72.0 %

Surrogate: Tetrachlorometaxylene

30-120 % 76.1 %

Surrogate: Tetrachlorometaxylene [2C]

30-120 % 77.2 %



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LMW-3-0323
23C0539-02 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/22/2023 11:48
Instrument: ECD7 Analyst: RJL Analyzed: 03/31/2023 22:38

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0631 Prepared: 03/27/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0539-02 G 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0258 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-02 G 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0256 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-02 G 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0257 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-02 G 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	58.5	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	57.6	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	57.8	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	51.9	%	



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LMW-3-0323
23C0539-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/22/2023 11:48
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 03:27

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-02 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-3-0323
23C0539-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/22/2023 11:48
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:46

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-02 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-3-0323
23C0539-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/22/2023 11:48
Instrument: ICP3 Analyst: DOE Analyzed: 04/13/2023 13:34

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0539-02 A 02
Preparation Batch: BLD0254 Sample Size: 25 mL
Prepared: 04/11/2023 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	35.6	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	ND	mg/L	U
Magnesium	7439-95-4	1	0.500	14.9	mg/L	
Manganese	7439-96-5	1	0.0100	0.0271	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.60	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



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LMW-3-0323
23C0539-02 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/22/2023 11:48
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:30

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0539-02 A
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Reported:
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LMW-5-0323
23C0539-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 13:20

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:44

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-03 B

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	5.45	ug/L	
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



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-5-0323
23C0539-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 13:20

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:44

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
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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-5-0323
23C0539-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 13:20

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 12:44

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	128	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	103	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	90.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

LMW-5-0323
23C0539-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 13:20

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 17:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0628
Prepared: 03/28/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0539-03 N 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-5-0323
23C0539-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 13:20

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 17:31

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	78.5	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	81.0	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	89.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	87.2	%	



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LMW-5-0323
23C0539-03 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/22/2023 13:20
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 17:31

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	90.9	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	98.3	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	122	%	*; Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	106	%	



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LMW-5-0323
23C0539-03 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/22/2023 13:20
Instrument: NT6 Analyst: JZ Analyzed: 04/01/2023 00:24

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0539-03 O 01
Preparation Batch: BLC0629 Sample Size: 500 mL
Prepared: 03/29/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>85.4</i>	<i>%</i>	



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LMW-5-0323
23C0539-03 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/22/2023 13:20
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 14:47

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-03 M 01
Preparation Batch: BLC0627 Sample Size: 500 mL
Prepared: 03/24/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	83.9	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	92.8	%	



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Project Manager: Gary Zimmerman

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LMW-5-0323
23C0539-03 (Water)

Chlorinated Pesticides

Method: EPA 8081B

Sampled: 03/22/2023 13:20

Instrument: ECD6 Analyst: JGR

Analyzed: 03/30/2023 20:00

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BLC0630
Prepared: 03/24/2023

Sample Size: 500 mL
Final Volume: 5 mL

Extract ID: 23C0539-03 P 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl

11-144 % 89.5 %

Surrogate: Decachlorobiphenyl [2C]

11-144 % 93.8 %

Surrogate: Tetrachlorometaxylene

30-120 % 65.4 %

Surrogate: Tetrachlorometaxylene [2C]

30-120 % 81.0 %



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LMW-5-0323
23C0539-03 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/22/2023 13:20
Instrument: ECD7 Analyst: RJL Analyzed: 03/31/2023 22:59

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0631 Prepared: 03/27/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0539-03 G 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0258 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-03 G 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0256 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-03 G 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0257 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-03 G 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	72.9	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	57.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	74.1	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	57.6	%	



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LMW-5-0323
23C0539-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/22/2023 13:20
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 03:31

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-03 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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LMW-5-0323
23C0539-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/22/2023 13:20
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:51

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-03 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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LMW-5-0323
23C0539-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/22/2023 13:20
Instrument: ICP3 Analyst: DOE Analyzed: 04/13/2023 13:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0539-03 A 02
Preparation Batch: BLD0254 Sample Size: 25 mL
Prepared: 04/11/2023 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	79.9	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	0.411	mg/L	
Magnesium	7439-95-4	1	0.500	43.2	mg/L	
Manganese	7439-96-5	1	0.0100	0.209	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	2.43	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	14.4	mg/L	
Vanadium	7440-62-2	1	0.0030	ND	mg/L	U
Zinc	7440-66-6	1	0.0200	ND	mg/L	U



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LMW-5-0323
23C0539-03 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/22/2023 13:20
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:32

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0539-03 A
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-8-0323
23C0539-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 14:30

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 13:05

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-04 B

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



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LMW-8-0323
23C0539-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 14:30

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 13:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
trans-1,3-Dichloropropene	10061-02-6	1	0.20	ND	ug/L	U
2-Hexanone	591-78-6	1	5.00	ND	ug/L	U
1,1,2-Trichloroethane	79-00-5	1	0.20	ND	ug/L	U
1,3-Dichloropropane	142-28-9	1	0.10	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.20	ND	ug/L	U
Dibromochloromethane	124-48-1	1	0.20	ND	ug/L	U
1,2-Dibromoethane	106-93-4	1	0.10	ND	ug/L	U
Chlorobenzene	108-90-7	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
1,1,1,2-Tetrachloroethane	630-20-6	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.60	ND	ug/L	U
Styrene	100-42-5	1	0.20	ND	ug/L	U
Bromoform	75-25-2	1	0.20	ND	ug/L	U
1,1,2,2-Tetrachloroethane	79-34-5	1	0.20	ND	ug/L	U
1,2,3-Trichloropropane	96-18-4	1	0.25	ND	ug/L	U
trans-1,4-Dichloro 2-Butene	110-57-6	1	1.00	ND	ug/L	U
n-Propylbenzene	103-65-1	1	0.20	ND	ug/L	U
Bromobenzene	108-86-1	1	0.20	ND	ug/L	U
Isopropyl Benzene	98-82-8	1	0.20	ND	ug/L	U
2-Chlorotoluene	95-49-8	1	0.10	ND	ug/L	U
4-Chlorotoluene	106-43-4	1	0.20	ND	ug/L	U
t-Butylbenzene	98-06-6	1	0.20	ND	ug/L	U
1,3,5-Trimethylbenzene	108-67-8	1	0.20	ND	ug/L	U
1,2,4-Trimethylbenzene	95-63-6	1	0.20	ND	ug/L	U
s-Butylbenzene	135-98-8	1	0.20	ND	ug/L	U
4-Isopropyl Toluene	99-87-6	1	0.20	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	0.20	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	0.20	ND	ug/L	U
n-Butylbenzene	104-51-8	1	0.20	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	0.20	ND	ug/L	U
1,2-Dibromo-3-chloropropane	96-12-8	1	0.50	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	0.50	ND	ug/L	U
Hexachloro-1,3-Butadiene	87-68-3	1	0.50	ND	ug/L	U
Naphthalene	91-20-3	1	0.50	ND	ug/L	U
1,2,3-Trichlorobenzene	87-61-6	1	0.50	ND	ug/L	U



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LMW-8-0323
23C0539-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/22/2023 14:30
Instrument: NT2 Analyst: LH Analyzed: 03/24/2023 13:05

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Dichlorodifluoromethane	75-71-8	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	131	%	*
<i>Surrogate: Toluene-d8</i>			80-120 %	105	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	84.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	106	%	



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LMW-8-0323
23C0539-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 14:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 18:04

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0628
Prepared: 03/28/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0539-04 N 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-8-0323
23C0539-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 14:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 18:04

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	ND	ug/L	U
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	81.6	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	83.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	89.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	84.6	%	



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LMW-8-0323
23C0539-04 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 14:30

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 18:04

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
Surrogate: Nitrobenzene-d5		27-120 %	95.1	%	
Surrogate: 2-Fluorobiphenyl		33-120 %	103	%	
Surrogate: 2,4,6-Tribromophenol		52-120 %	125	%	*, Q
Surrogate: p-Terphenyl-d14		28-120 %	111	%	



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LMW-8-0323
23C0539-04 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/22/2023 14:30
Instrument: NT6 Analyst: JZ Analyzed: 04/01/2023 00:49

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0539-04 O 01
Preparation Batch: BLC0629 Sample Size: 500 mL
Prepared: 03/29/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>84.3</i>	<i>%</i>	



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LMW-8-0323
23C0539-04 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/22/2023 14:30
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 15:06

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-04 M 01
Preparation Batch: BLC0627 Sample Size: 500 mL
Prepared: 03/24/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	103	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	111	%	



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LMW-8-0323
23C0539-04 (Water)

Chlorinated Pesticides

Method: EPA 8081B

Sampled: 03/22/2023 14:30

Instrument: ECD6 Analyst: JGR

Analyzed: 03/30/2023 20:18

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BLC0630
Prepared: 03/24/2023

Sample Size: 500 mL
Final Volume: 5 mL

Extract ID: 23C0539-04 P 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl

11-144 % 84.3 %

Surrogate: Decachlorobiphenyl [2C]

11-144 % 86.7 %

Surrogate: Tetrachlorometaxylene

30-120 % 76.2 %

Surrogate: Tetrachlorometaxylene [2C]

30-120 % 78.2 %



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LMW-8-0323
23C0539-04 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/22/2023 14:30
Instrument: ECD7 Analyst: RJL Analyzed: 03/31/2023 23:20

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0631 Prepared: 03/27/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0539-04 G 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0258 Cleansed: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-04 G 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0256 Cleansed: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-04 G 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0257 Cleansed: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-04 G 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	59.2	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	53.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	59.9	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	50.9	%	



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LMW-8-0323
23C0539-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/22/2023 14:30
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 03:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-04 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-8-0323
23C0539-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/22/2023 14:30
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 05:55

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-04 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-8-0323
23C0539-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D Sampled: 03/22/2023 14:30
Instrument: ICP3 Analyst: DOE Analyzed: 04/13/2023 13:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A Extract ID: 23C0539-04 A 02
Preparation Batch: BLD0254 Sample Size: 25 mL
Prepared: 04/11/2023 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	43.5	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	9.71	mg/L	
Magnesium	7439-95-4	1	0.500	22.7	mg/L	
Manganese	7439-96-5	1	0.0100	0.376	mg/L	
Nickel	7440-02-0	1	0.0100	ND	mg/L	U
Potassium	7440-09-7	1	0.500	1.44	mg/L	
Silver	7440-22-4	1	0.0050	ND	mg/L	U
Sodium	7440-23-5	1	0.500	7.86	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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LMW-8-0323
23C0539-04 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/22/2023 14:30
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:35

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0539-04 A
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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LMW-FB-0323
23C0539-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 14:45

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 13:25

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-05 B

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



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LMW-FB-0323
23C0539-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 14:45

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 13:25

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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LMW-FB-0323
23C0539-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D Sampled: 03/22/2023 14:45
Instrument: NT2 Analyst: LH Analyzed: 03/24/2023 13:25

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	124	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	103	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	88.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	104	%	



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LMW-FB-0323
23C0539-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 14:45

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 18:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq)
Preparation Batch: BLC0628
Prepared: 03/28/2023

Sample Size: 500 mL
Final Volume: 0.5 mL

Extract ID: 23C0539-05 N 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	1.0	ND	ug/L	U
bis(2-chloroethyl) ether	111-44-4	1	1.0	ND	ug/L	U
2-Chlorophenol	95-57-8	1	1.0	ND	ug/L	U
1,3-Dichlorobenzene	541-73-1	1	1.0	ND	ug/L	U
1,4-Dichlorobenzene	106-46-7	1	1.0	ND	ug/L	U
Benzyl Alcohol	100-51-6	1	2.0	ND	ug/L	U
1,2-Dichlorobenzene	95-50-1	1	1.0	ND	ug/L	U
2-Methylphenol	95-48-7	1	1.0	ND	ug/L	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	1.0	ND	ug/L	U
4-Methylphenol	106-44-5	1	2.0	ND	ug/L	U
N-Nitroso-di-n-Propylamine	621-64-7	1	1.0	ND	ug/L	U
Hexachloroethane	67-72-1	1	2.0	ND	ug/L	U
Nitrobenzene	98-95-3	1	1.0	ND	ug/L	U
Isophorone	78-59-1	1	1.0	ND	ug/L	U
2-Nitrophenol	88-75-5	1	3.0	ND	ug/L	U
2,4-Dimethylphenol	105-67-9	1	3.0	ND	ug/L	U
Bis(2-Chloroethoxy)methane	111-91-1	1	1.0	ND	ug/L	U
Benzoic acid	65-85-0	1	20.0	ND	ug/L	U
2,4-Dichlorophenol	120-83-2	1	3.0	ND	ug/L	U
1,2,4-Trichlorobenzene	120-82-1	1	1.0	ND	ug/L	U
Naphthalene	91-20-3	1	1.0	ND	ug/L	U
4-Chloroaniline	106-47-8	1	5.0	ND	ug/L	U
Hexachlorobutadiene	87-68-3	1	3.0	ND	ug/L	U
4-Chloro-3-Methylphenol	59-50-7	1	3.0	ND	ug/L	U
2-Methylnaphthalene	91-57-6	1	1.0	ND	ug/L	U
Hexachlorocyclopentadiene	77-47-4	1	5.0	ND	ug/L	U
2,4,6-Trichlorophenol	88-06-2	1	3.0	ND	ug/L	U
2,4,5-Trichlorophenol	95-95-4	1	5.0	ND	ug/L	U
2-Chloronaphthalene	91-58-7	1	1.0	ND	ug/L	U
2-Nitroaniline	88-74-4	1	3.0	ND	ug/L	U
Dimethylphthalate	131-11-3	1	1.0	ND	ug/L	U
Acenaphthylene	208-96-8	1	1.0	ND	ug/L	U
2,6-Dinitrotoluene	606-20-2	1	3.0	ND	ug/L	U
3-Nitroaniline	99-09-2	1	3.0	ND	ug/L	U



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LMW-FB-0323
23C0539-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 03/22/2023 14:45

Instrument: NT6 Analyst: JZ

Analyzed: 03/31/2023 18:37

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Acenaphthene	83-32-9	1	1.0	ND	ug/L	U
2,4-Dinitrophenol	51-28-5	1	20.0	ND	ug/L	U
Dibenzofuran	132-64-9	1	1.0	ND	ug/L	U
4-Nitrophenol	100-02-7	1	10.0	ND	ug/L	U
2,4-Dinitrotoluene	121-14-2	1	3.0	ND	ug/L	U
Fluorene	86-73-7	1	1.0	ND	ug/L	U
Diethyl phthalate	84-66-2	1	1.0	ND	ug/L	U
4-Chlorophenylphenyl ether	7005-72-3	1	1.0	ND	ug/L	U
4-Nitroaniline	100-01-6	1	3.0	ND	ug/L	U
4,6-Dinitro-2-methylphenol	534-52-1	1	10.0	ND	ug/L	U
N-Nitrosodiphenylamine	86-30-6	1	1.0	ND	ug/L	U
4-Bromophenyl phenyl ether	101-55-3	1	1.0	ND	ug/L	U
Hexachlorobenzene	118-74-1	1	1.0	ND	ug/L	U
Pentachlorophenol	87-86-5	1	10.0	ND	ug/L	U
Phenanthrene	85-01-8	1	1.0	ND	ug/L	U
Anthracene	120-12-7	1	1.0	ND	ug/L	U
Carbazole	86-74-8	1	1.0	ND	ug/L	U
Di-n-Butylphthalate	84-74-2	1	1.0	1.1	ug/L	
Fluoranthene	206-44-0	1	1.0	ND	ug/L	U
Pyrene	129-00-0	1	1.0	ND	ug/L	U
Butylbenzylphthalate	85-68-7	1	1.0	ND	ug/L	U
Benzo(a)anthracene	56-55-3	1	1.0	ND	ug/L	U
3,3'-Dichlorobenzidine	91-94-1	1	5.0	ND	ug/L	U
Chrysene	218-01-9	1	1.0	ND	ug/L	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	3.0	ND	ug/L	U
Di-n-Octylphthalate	117-84-0	1	1.0	ND	ug/L	U
Benzo(a)pyrene	50-32-8	1	1.0	ND	ug/L	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	1.0	ND	ug/L	U
Dibenzo(a,h)anthracene	53-70-3	1	1.0	ND	ug/L	U
Benzo(g,h,i)perylene	191-24-2	1	1.0	ND	ug/L	U
Benzofluoranthenes, Total		1	2.0	ND	ug/L	U
1-Methylnaphthalene	90-12-0	1	1.0	ND	ug/L	U
<i>Surrogate: 2-Fluorophenol</i>			33-120 %	82.7	%	
<i>Surrogate: Phenol-d5</i>			38-120 %	85.6	%	
<i>Surrogate: 2-Chlorophenol-d4</i>			41-120 %	92.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			20-120 %	87.2	%	



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LMW-FB-0323
23C0539-05 (Water)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 03/22/2023 14:45
Instrument: NT6 Analyst: JZ Analyzed: 03/31/2023 18:37

Analysis by: Analytical Resources, LLC

Analyte	CAS Number	Recovery		Units	Notes
		Limits	Recovery		
<i>Surrogate: Nitrobenzene-d5</i>		27-120 %	92.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>		33-120 %	98.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>		52-120 %	123	%	* , Q
<i>Surrogate: p-Terphenyl-d14</i>		28-120 %	109	%	



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LMW-FB-0323
23C0539-05 (Water)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 03/22/2023 14:45
Instrument: NT6 Analyst: JZ Analyzed: 04/01/2023 01:14

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3520C (Liq Liq) Extract ID: 23C0539-05 O 01
Preparation Batch: BLC0629 Sample Size: 500 mL
Prepared: 03/29/2023 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
<i>Surrogate: 1,4-Dioxane-d8</i>			<i>33.6-120 %</i>	<i>79.2</i>	<i>%</i>	



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LMW-FB-0323
23C0539-05 (Water)

Petroleum Hydrocarbons

Method: NWTPH-HCID Sampled: 03/22/2023 14:45
Instrument: FID4 Analyst: JR Analyzed: 03/28/2023 15:26

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF Extract ID: 23C0539-05 M 01
Preparation Batch: BLC0627 Sample Size: 500 mL
Prepared: 03/24/2023 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
<i>Surrogate: o-Terphenyl</i>			50-150 %	82.8	%	
<i>Surrogate: n-Triacontane</i>			50-150 %	96.0	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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LMW-FB-0323
23C0539-05 (Water)

Chlorinated Pesticides

Method: EPA 8081B

Sampled: 03/22/2023 14:45

Instrument: ECD6 Analyst: JGR

Analyzed: 03/30/2023 20:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BLC0630
Prepared: 03/24/2023

Sample Size: 500 mL
Final Volume: 5 mL

Extract ID: 23C0539-05 P 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
alpha-BHC	319-84-6	1	0.025	ND	ug/L	U
beta-BHC	319-85-7	1	0.025	ND	ug/L	U
gamma-BHC (Lindane)	58-89-9	1	0.025	ND	ug/L	U
delta-BHC	319-86-8	1	0.025	ND	ug/L	U
Heptachlor	76-44-8	1	0.025	ND	ug/L	U
Aldrin	309-00-2	1	0.025	ND	ug/L	U
Heptachlor Epoxide	1024-57-3	1	0.050	ND	ug/L	U
trans-Chlordane (beta-Chlordane)	5103-74-2	1	0.025	ND	ug/L	U
cis-Chlordane (alpha-chlordane)	5103-71-9	1	0.025	ND	ug/L	U
Endosulfan I	959-98-8	1	0.025	ND	ug/L	U
4,4'-DDE	72-55-9	1	0.050	ND	ug/L	U
Dieldrin	60-57-1	1	0.050	ND	ug/L	U
Endrin	72-20-8	1	0.050	ND	ug/L	U
Endosulfan II	33213-65-9	1	0.050	ND	ug/L	U
4,4'-DDD	72-54-8	1	0.050	ND	ug/L	U
Endrin Aldehyde	7421-93-4	1	0.050	ND	ug/L	U
4,4'-DDT	50-29-3	1	0.050	ND	ug/L	U
Endosulfan Sulfate	1031-07-8	1	0.050	ND	ug/L	U
Endrin Ketone	53494-70-5	1	0.050	ND	ug/L	U
Methoxychlor	72-43-5	1	0.250	ND	ug/L	U
Toxaphene	8001-35-2	1	1.25	ND	ug/L	U

Surrogate: Decachlorobiphenyl

11-144 % 65.0 %

Surrogate: Decachlorobiphenyl [2C]

11-144 % 67.3 %

Surrogate: Tetrachlorometaxylene

30-120 % 76.0 %

Surrogate: Tetrachlorometaxylene [2C]

30-120 % 76.2 %



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LMW-FB-0323
23C0539-05 (Water)

Aroclor PCB

Method: EPA 8082A Sampled: 03/22/2023 14:45
Instrument: ECD7 Analyst: RJL Analyzed: 03/31/2023 23:40

Analysis by: Analytical Resources, LLC

Sample Preparation:	Preparation Method: EPA 3510C SepF Preparation Batch: BLC0631 Prepared: 03/27/2023	Sample Size: 1000 mL Final Volume: 0.5 mL	Extract ID: 23C0539-05 G 01
Sample Cleanup:	Cleanup Method: Silica Gel Cleanup Batch: CLC0258 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-05 G 01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CLC0256 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-05 G 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CLC0257 Cleaned: 31-Mar-2023	Initial Volume: 0.5 uL Final Volume: 0.5 uL	Extract ID: 23C0539-05 G 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	0.010	ND	ug/L	U
Aroclor 1221	11104-28-2	1	0.010	ND	ug/L	U
Aroclor 1232	11141-16-5	1	0.010	ND	ug/L	U
Aroclor 1242	53469-21-9	1	0.010	ND	ug/L	U
Aroclor 1248	12672-29-6	1	0.010	ND	ug/L	U
Aroclor 1254	11097-69-1	1	0.010	ND	ug/L	U
Aroclor 1260	11096-82-5	1	0.010	ND	ug/L	U
<i>Surrogate: Decachlorobiphenyl</i>			29-120 %	48.7	%	
<i>Surrogate: Tetrachlorometaxylene</i>			32-120 %	49.7	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			29-120 %	48.4	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			32-120 %	45.7	%	



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LMW-FB-0323
23C0539-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 Sampled: 03/22/2023 14:45
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/07/2023 03:40

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-05 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-FB-0323
23C0539-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8 UCT-KED Sampled: 03/22/2023 14:45
Instrument: ICPMS2 Analyst: MCB Analyzed: 04/08/2023 06:01

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 23C0539-05 A 01
Preparation Batch: BLD0101 Sample Size: 25 mL
Prepared: 04/05/2023 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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LMW-FB-0323
23C0539-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D

Sampled: 03/22/2023 14:45

Instrument: ICP3 Analyst: DOE

Analyzed: 04/13/2023 13:43

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BLD0254
Prepared: 04/11/2023

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 23C0539-05 A 02

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



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LMW-FB-0323
23C0539-05 (Water)

Metals and Metallic Compounds

Method: EPA 7470A Sampled: 03/22/2023 14:45
Instrument: HYDRA Analyst: ml Analyzed: 04/05/2023 14:37

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: TWM EPA 7470A Extract ID: 23C0539-05 A
Preparation Batch: BLC0855 Sample Size: 20 mL
Prepared: 03/31/2023 Final Volume: 20 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00100	ND	mg/L	U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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Trip Blank
23C0539-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 10:15

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 11:22

Analysis by: Analytical Resources, LLC

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)
Preparation Batch: BLC0641
Prepared: 03/24/2023

Sample Size: 10 mL
Final Volume: 10 mL

Extract ID: 23C0539-06 A

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	5.32	ug/L	
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



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Reported:
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Trip Blank
23C0539-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 10:15

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 11:22

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



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Reported:
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Trip Blank
23C0539-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 03/22/2023 10:15

Instrument: NT2 Analyst: LH

Analyzed: 03/24/2023 11:22

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	124	%	
<i>Surrogate: Toluene-d8</i>			80-120 %	103	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			80-120 %	87.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			80-120 %	103	%	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0641-BLK1)		Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 08:01								
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



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0641-BLK1)		Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 08:01								
2-Hexanone	ND	5.00	ug/L							U
1,1,2-Trichloroethane	ND	0.20	ug/L							U
1,3-Dichloropropane	ND	0.10	ug/L							U
Tetrachloroethene	ND	0.20	ug/L							U
Dibromochloromethane	ND	0.20	ug/L							U
1,2-Dibromoethane	ND	0.10	ug/L							U
Chlorobenzene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
1,1,1,2-Tetrachloroethane	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Xylenes, total	ND	0.60	ug/L							U
Styrene	ND	0.20	ug/L							U
Bromoform	ND	0.20	ug/L							U
1,1,2,2-Tetrachloroethane	ND	0.20	ug/L							U
1,2,3-Trichloropropane	ND	0.25	ug/L							U
trans-1,4-Dichloro 2-Butene	ND	1.00	ug/L							U
n-Propylbenzene	ND	0.20	ug/L							U
Bromobenzene	ND	0.20	ug/L							U
Isopropyl Benzene	ND	0.20	ug/L							U
2-Chlorotoluene	ND	0.10	ug/L							U
4-Chlorotoluene	ND	0.20	ug/L							U
t-Butylbenzene	ND	0.20	ug/L							U
1,3,5-Trimethylbenzene	ND	0.20	ug/L							U
1,2,4-Trimethylbenzene	ND	0.20	ug/L							U
s-Butylbenzene	ND	0.20	ug/L							U
4-Isopropyl Toluene	ND	0.20	ug/L							U
1,3-Dichlorobenzene	ND	0.20	ug/L							U
1,4-Dichlorobenzene	ND	0.20	ug/L							U
n-Butylbenzene	ND	0.20	ug/L							U
1,2-Dichlorobenzene	ND	0.20	ug/L							U
1,2-Dibromo-3-chloropropane	ND	0.50	ug/L							U
1,2,4-Trichlorobenzene	ND	0.50	ug/L							U
Hexachloro-1,3-Butadiene	ND	0.50	ug/L							U
Naphthalene	ND	0.50	ug/L							U



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0641-BLK1)		Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 08:01								
1,2,3-Trichlorobenzene	ND	0.50	ug/L							U
Dichlorodifluoromethane	ND	0.20	ug/L							U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.97		ug/L	5.00		119	80-129			
<i>Surrogate: Toluene-d8</i>	5.09		ug/L	5.00		102	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.55		ug/L	5.00		91.0	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.15		ug/L	5.00		103	80-120			
LCS (BLC0641-BS1)		Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 07:00								
Chloromethane	11.3	0.50	ug/L	10.0		113	60-138			
Vinyl Chloride	10.9	0.10	ug/L	10.0		109	66-133			
Bromomethane	11.0	1.00	ug/L	10.0		110	72-131			
Chloroethane	10.9	0.20	ug/L	10.0		109	60-155			
Trichlorofluoromethane	11.9	0.20	ug/L	10.0		119	62-141			
Acrolein	52.3	5.00	ug/L	50.0		105	52-190			
1,1,2-Trichloro-1,2,2-Trifluoroethane	11.7	0.20	ug/L	10.0		117	76-129			
Acetone	56.1	5.00	ug/L	50.0		112	58-142			
1,1-Dichloroethene	12.0	0.20	ug/L	10.0		120	69-135			
Iodomethane	11.2	1.00	ug/L	10.0		112	56-147			
Methylene Chloride	11.1	1.00	ug/L	10.0		111	65-135			
Acrylonitrile	10.7	1.00	ug/L	10.0		107	64-134			
Carbon Disulfide	11.8	0.20	ug/L	10.0		118	78-125			
trans-1,2-Dichloroethene	10.8	0.20	ug/L	10.0		108	78-128			
Vinyl Acetate	9.72	0.20	ug/L	10.0		97.2	55-138			
1,1-Dichloroethane	11.3	0.20	ug/L	10.0		113	76-124			
2-Butanone	56.3	5.00	ug/L	50.0		113	61-140			
2,2-Dichloropropane	11.6	0.20	ug/L	10.0		116	66-147			
cis-1,2-Dichloroethene	10.7	0.20	ug/L	10.0		107	80-121			
Chloroform	11.6	0.20	ug/L	10.0		116	80-122			
Bromochloromethane	10.6	0.20	ug/L	10.0		106	80-121			
1,1,1-Trichloroethane	12.6	0.20	ug/L	10.0		126	79-123			*, Q
1,1-Dichloropropene	10.6	0.10	ug/L	10.0		106	80-127			
Carbon tetrachloride	10.0	0.20	ug/L	10.0		100	53-137			
1,2-Dichloroethane	11.0	0.20	ug/L	10.0		110	75-123			
Benzene	10.9	0.20	ug/L	10.0		109	80-120			
Trichloroethene	10.4	0.20	ug/L	10.0		104	80-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0641-BS1)				Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 07:00						
1,2-Dichloropropane	10.6	0.20	ug/L	10.0		106	80-120			
Bromodichloromethane	11.7	0.20	ug/L	10.0		117	80-121			
Dibromomethane	10.3	0.20	ug/L	10.0		103	80-120			
2-Chloroethyl vinyl ether	9.76	1.00	ug/L	10.0		97.6	64-120			
4-Methyl-2-Pentanone	53.2	2.50	ug/L	50.0		106	67-133			
cis-1,3-Dichloropropene	11.7	0.20	ug/L	10.0		117	80-124			
Toluene	10.5	0.20	ug/L	10.0		105	80-120			
trans-1,3-Dichloropropene	10.0	0.20	ug/L	10.0		100	71-127			
2-Hexanone	52.3	5.00	ug/L	50.0		105	69-133			
1,1,2-Trichloroethane	10.5	0.20	ug/L	10.0		105	80-121			
1,3-Dichloropropane	9.83	0.10	ug/L	10.0		98.3	80-120			
Tetrachloroethene	9.57	0.20	ug/L	10.0		95.7	80-120			
Dibromochloromethane	8.61	0.20	ug/L	10.0		86.1	65-135			
1,2-Dibromoethane	11.3	0.10	ug/L	10.0		113	80-121			
Chlorobenzene	10.0	0.20	ug/L	10.0		100	80-120			
Ethylbenzene	10.1	0.20	ug/L	10.0		101	80-120			
1,1,1,2-Tetrachloroethane	8.89	0.20	ug/L	10.0		88.9	80-120			
m,p-Xylene	21.3	0.40	ug/L	20.0		107	80-121			
o-Xylene	10.3	0.20	ug/L	10.0		103	80-121			
Xylenes, total	31.6	0.60	ug/L	30.0		105	76-127			
Styrene	10.9	0.20	ug/L	10.0		109	80-124			
Bromoform	7.72	0.20	ug/L	10.0		77.2	51-134			Q
1,1,2,2-Tetrachloroethane	9.69	0.20	ug/L	10.0		96.9	77-123			
1,2,3-Trichloropropane	9.44	0.25	ug/L	10.0		94.4	76-125			
trans-1,4-Dichloro 2-Butene	9.90	1.00	ug/L	10.0		99.0	55-129			
n-Propylbenzene	10.7	0.20	ug/L	10.0		107	78-130			
Bromobenzene	9.30	0.20	ug/L	10.0		93.0	80-120			
Isopropyl Benzene	10.5	0.20	ug/L	10.0		105	80-128			
2-Chlorotoluene	9.70	0.10	ug/L	10.0		97.0	78-122			
4-Chlorotoluene	9.97	0.20	ug/L	10.0		99.7	80-121			
t-Butylbenzene	10.2	0.20	ug/L	10.0		102	78-125			
1,3,5-Trimethylbenzene	10.6	0.20	ug/L	10.0		106	80-129			
1,2,4-Trimethylbenzene	10.5	0.20	ug/L	10.0		105	80-127			
s-Butylbenzene	10.5	0.20	ug/L	10.0		105	78-129			
4-Isopropyl Toluene	10.4	0.20	ug/L	10.0		104	79-130			



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Project: Landsburg
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Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0641-BS1) Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 07:00										
1,3-Dichlorobenzene	9.58	0.20	ug/L	10.0		95.8	80-120			
1,4-Dichlorobenzene	9.57	0.20	ug/L	10.0		95.7	80-120			
n-Butylbenzene	10.8	0.20	ug/L	10.0		108	74-129			
1,2-Dichlorobenzene	9.56	0.20	ug/L	10.0		95.6	80-120			
1,2-Dibromo-3-chloropropane	8.56	0.50	ug/L	10.0		85.6	62-123			
1,2,4-Trichlorobenzene	9.65	0.50	ug/L	10.0		96.5	64-124			
Hexachloro-1,3-Butadiene	9.53	0.50	ug/L	10.0		95.3	65-145			
Naphthalene	10.3	0.50	ug/L	10.0		103	50-134			
1,2,3-Trichlorobenzene	9.76	0.50	ug/L	10.0		97.6	49-133			
Dichlorodifluoromethane	12.5	0.20	ug/L	10.0		125	48-147			Q
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.56		ug/L	5.00		111	80-129			
<i>Surrogate: Toluene-d8</i>	5.22		ug/L	5.00		104	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.89		ug/L	5.00		97.9	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.03		ug/L	5.00		101	80-120			

LCS Dup (BLC0641-BS1) Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 07:20										
Chloromethane	12.5	0.50	ug/L	10.0		125	60-138	9.65	30	
Vinyl Chloride	11.9	0.10	ug/L	10.0		119	66-133	8.88	30	
Bromomethane	12.0	1.00	ug/L	10.0		120	72-131	9.05	30	
Chloroethane	11.7	0.20	ug/L	10.0		117	60-155	7.08	30	
Trichlorofluoromethane	12.5	0.20	ug/L	10.0		125	62-141	4.44	30	
Acrolein	58.0	5.00	ug/L	50.0		116	52-190	10.20	30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	12.1	0.20	ug/L	10.0		121	76-129	3.51	30	
Acetone	61.3	5.00	ug/L	50.0		123	58-142	8.98	30	
1,1-Dichloroethene	12.9	0.20	ug/L	10.0		129	69-135	6.84	30	
Iodomethane	12.1	1.00	ug/L	10.0		121	56-147	7.44	30	
Methylene Chloride	11.8	1.00	ug/L	10.0		118	65-135	5.81	30	
Acrylonitrile	11.8	1.00	ug/L	10.0		118	64-134	9.36	30	
Carbon Disulfide	12.6	0.20	ug/L	10.0		126	78-125	6.40	30	*
trans-1,2-Dichloroethene	11.7	0.20	ug/L	10.0		117	78-128	7.53	30	
Vinyl Acetate	10.9	0.20	ug/L	10.0		109	55-138	11.20	30	
1,1-Dichloroethane	12.2	0.20	ug/L	10.0		122	76-124	7.38	30	
2-Butanone	62.2	5.00	ug/L	50.0		124	61-140	9.93	30	
2,2-Dichloropropane	12.3	0.20	ug/L	10.0		123	66-147	6.28	30	
cis-1,2-Dichloroethene	11.4	0.20	ug/L	10.0		114	80-121	6.79	30	



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0641-BSD1)										
					Prepared: 24-Mar-2023		Analyzed: 24-Mar-2023 07:20			
Chloroform	12.3	0.20	ug/L	10.0	123	80-122	5.83	30		*
Bromochloromethane	11.2	0.20	ug/L	10.0	112	80-121	5.49	30		
1,1,1-Trichloroethane	13.4	0.20	ug/L	10.0	134	79-123	6.50	30		*, Q
1,1-Dichloropropene	11.4	0.10	ug/L	10.0	114	80-127	7.27	30		
Carbon tetrachloride	10.7	0.20	ug/L	10.0	107	53-137	6.16	30		
1,2-Dichloroethane	11.6	0.20	ug/L	10.0	116	75-123	5.42	30		
Benzene	11.6	0.20	ug/L	10.0	116	80-120	5.72	30		
Trichloroethene	11.1	0.20	ug/L	10.0	111	80-120	5.90	30		
1,2-Dichloropropane	11.2	0.20	ug/L	10.0	112	80-120	5.47	30		
Bromodichloromethane	12.4	0.20	ug/L	10.0	124	80-121	5.68	30		*
Dibromomethane	11.0	0.20	ug/L	10.0	110	80-120	6.26	30		
2-Chloroethyl vinyl ether	10.4	1.00	ug/L	10.0	104	64-120	6.62	30		
4-Methyl-2-Pentanone	58.7	2.50	ug/L	50.0	117	67-133	9.72	30		
cis-1,3-Dichloropropene	12.6	0.20	ug/L	10.0	126	80-124	7.17	30		*
Toluene	11.2	0.20	ug/L	10.0	112	80-120	6.28	30		
trans-1,3-Dichloropropene	10.6	0.20	ug/L	10.0	106	71-127	6.11	30		
2-Hexanone	57.1	5.00	ug/L	50.0	114	69-133	8.84	30		
1,1,2-Trichloroethane	11.2	0.20	ug/L	10.0	112	80-121	6.59	30		
1,3-Dichloropropane	10.5	0.10	ug/L	10.0	105	80-120	6.44	30		
Tetrachloroethene	10.1	0.20	ug/L	10.0	101	80-120	4.97	30		
Dibromochloromethane	9.16	0.20	ug/L	10.0	91.6	65-135	6.12	30		
1,2-Dibromoethane	12.4	0.10	ug/L	10.0	124	80-121	9.13	30		*
Chlorobenzene	10.7	0.20	ug/L	10.0	107	80-120	6.71	30		
Ethylbenzene	10.7	0.20	ug/L	10.0	107	80-120	5.90	30		
1,1,1,2-Tetrachloroethane	9.39	0.20	ug/L	10.0	93.9	80-120	5.44	30		
m,p-Xylene	22.4	0.40	ug/L	20.0	112	80-121	5.15	30		
o-Xylene	10.9	0.20	ug/L	10.0	109	80-121	5.79	30		
Xylenes, total	33.4	0.60	ug/L	30.0	111	76-127	5.36	30		
Styrene	11.5	0.20	ug/L	10.0	115	80-124	5.51	30		
Bromoform	7.81	0.20	ug/L	10.0	78.1	51-134	1.17	30		Q
1,1,1,2,2-Tetrachloroethane	10.5	0.20	ug/L	10.0	105	77-123	8.04	30		
1,2,3-Trichloropropane	10.4	0.25	ug/L	10.0	104	76-125	9.48	30		
trans-1,4-Dichloro 2-Butene	9.83	1.00	ug/L	10.0	98.3	55-129	0.68	30		
n-Propylbenzene	11.4	0.20	ug/L	10.0	114	78-130	6.43	30		
Bromobenzene	9.92	0.20	ug/L	10.0	99.2	80-120	6.51	30		



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BLC0641 - EPA 8260D

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0641-BSD1)				Prepared: 24-Mar-2023 Analyzed: 24-Mar-2023 07:20						
Isopropyl Benzene	11.3	0.20	ug/L	10.0		113	80-128	7.07	30	
2-Chlorotoluene	10.3	0.10	ug/L	10.0		103	78-122	6.29	30	
4-Chlorotoluene	10.4	0.20	ug/L	10.0		104	80-121	4.40	30	
t-Butylbenzene	10.9	0.20	ug/L	10.0		109	78-125	6.50	30	
1,3,5-Trimethylbenzene	11.4	0.20	ug/L	10.0		114	80-129	7.68	30	
1,2,4-Trimethylbenzene	11.2	0.20	ug/L	10.0		112	80-127	6.42	30	
s-Butylbenzene	11.2	0.20	ug/L	10.0		112	78-129	6.93	30	
4-Isopropyl Toluene	11.1	0.20	ug/L	10.0		111	79-130	6.47	30	
1,3-Dichlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	6.90	30	
1,4-Dichlorobenzene	10.3	0.20	ug/L	10.0		103	80-120	7.15	30	
n-Butylbenzene	11.5	0.20	ug/L	10.0		115	74-129	6.19	30	
1,2-Dichlorobenzene	10.2	0.20	ug/L	10.0		102	80-120	6.23	30	
1,2-Dibromo-3-chloropropane	9.08	0.50	ug/L	10.0		90.8	62-123	5.92	30	
1,2,4-Trichlorobenzene	10.4	0.50	ug/L	10.0		104	64-124	7.35	30	
Hexachloro-1,3-Butadiene	10.2	0.50	ug/L	10.0		102	65-145	6.52	30	
Naphthalene	11.1	0.50	ug/L	10.0		111	50-134	7.00	30	
1,2,3-Trichlorobenzene	10.6	0.50	ug/L	10.0		106	49-133	7.85	30	
Dichlorodifluoromethane	13.1	0.20	ug/L	10.0		131	48-147	5.08	30	Q
<i>Surrogate: 1,2-Dichloroethane-d4</i>	5.64		ug/L	5.00		113	80-129			
<i>Surrogate: Toluene-d8</i>	5.12		ug/L	5.00		102	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.77		ug/L	5.00		95.5	80-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	5.09		ug/L	5.00		102	80-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0628-BLK1)										
Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 11:56										
Phenol	ND	1.0	ug/L							U
bis(2-chloroethyl) ether	ND	1.0	ug/L							U
2-Chlorophenol	ND	1.0	ug/L							U
1,3-Dichlorobenzene	ND	1.0	ug/L							U
1,4-Dichlorobenzene	ND	1.0	ug/L							U
Benzyl Alcohol	ND	2.0	ug/L							U
1,2-Dichlorobenzene	ND	1.0	ug/L							U
2-Methylphenol	ND	1.0	ug/L							U
2,2'-Oxybis(1-chloropropane)	ND	1.0	ug/L							U
4-Methylphenol	ND	2.0	ug/L							U
N-Nitroso-di-n-Propylamine	ND	1.0	ug/L							U
Hexachloroethane	ND	2.0	ug/L							U
Nitrobenzene	ND	1.0	ug/L							U
Isophorone	ND	1.0	ug/L							U
2-Nitrophenol	ND	3.0	ug/L							U
2,4-Dimethylphenol	ND	3.0	ug/L							U
Bis(2-Chloroethoxy)methane	ND	1.0	ug/L							U
Benzoic acid	ND	20.0	ug/L							U
2,4-Dichlorophenol	ND	3.0	ug/L							U
1,2,4-Trichlorobenzene	ND	1.0	ug/L							U
Naphthalene	ND	1.0	ug/L							U
4-Chloroaniline	ND	5.0	ug/L							U
Hexachlorobutadiene	ND	3.0	ug/L							U
4-Chloro-3-Methylphenol	ND	3.0	ug/L							U
2-Methylnaphthalene	ND	1.0	ug/L							U
Hexachlorocyclopentadiene	ND	5.0	ug/L							U
2,4,6-Trichlorophenol	ND	3.0	ug/L							U
2,4,5-Trichlorophenol	ND	5.0	ug/L							U
2-Chloronaphthalene	ND	1.0	ug/L							U
2-Nitroaniline	ND	3.0	ug/L							U
Dimethylphthalate	ND	1.0	ug/L							U
Acenaphthylene	ND	1.0	ug/L							U
2,6-Dinitrotoluene	ND	3.0	ug/L							U
3-Nitroaniline	ND	3.0	ug/L							U
Acenaphthene	ND	1.0	ug/L							U



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0628-BLK1)										
Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 11:56										
2,4-Dinitrophenol	ND	20.0	ug/L							U
Dibenzofuran	ND	1.0	ug/L							U
4-Nitrophenol	ND	10.0	ug/L							U
2,4-Dinitrotoluene	ND	3.0	ug/L							U
Fluorene	ND	1.0	ug/L							U
Diethyl phthalate	ND	1.0	ug/L							U
4-Chlorophenylphenyl ether	ND	1.0	ug/L							U
4-Nitroaniline	ND	3.0	ug/L							U
4,6-Dinitro-2-methylphenol	ND	10.0	ug/L							U
N-Nitrosodiphenylamine	ND	1.0	ug/L							U
4-Bromophenyl phenyl ether	ND	1.0	ug/L							U
Hexachlorobenzene	ND	1.0	ug/L							U
Pentachlorophenol	ND	10.0	ug/L							U
Phenanthrene	ND	1.0	ug/L							U
Anthracene	ND	1.0	ug/L							U
Carbazole	ND	1.0	ug/L							U
Di-n-Butylphthalate	ND	1.0	ug/L							U
Fluoranthene	ND	1.0	ug/L							U
Pyrene	ND	1.0	ug/L							U
Butylbenzylphthalate	ND	1.0	ug/L							U
Benzo(a)anthracene	ND	1.0	ug/L							U
3,3'-Dichlorobenzidine	ND	5.0	ug/L							U
Chrysene	ND	1.0	ug/L							U
bis(2-Ethylhexyl)phthalate	ND	3.0	ug/L							U
Di-n-Octylphthalate	ND	1.0	ug/L							U
Benzo(a)pyrene	ND	1.0	ug/L							U
Indeno(1,2,3-cd)pyrene	ND	1.0	ug/L							U
Dibenzo(a,h)anthracene	ND	1.0	ug/L							U
Benzo(g,h,i)perylene	ND	1.0	ug/L							U
Benzo(a)fluoranthene, Total	ND	2.0	ug/L							U
1-Methylnaphthalene	ND	1.0	ug/L							U
<i>Surrogate: 2-Fluorophenol</i>	28.8		ug/L	37.5		76.9			33-120	
<i>Surrogate: Phenol-d5</i>	29.4		ug/L	37.5		78.5			38-120	
<i>Surrogate: 2-Chlorophenol-d4</i>	32.3		ug/L	37.5		86.2			41-120	



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0628-BLK1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 11:56						
Surrogate: 1,2-Dichlorobenzene-d4	21.6		ug/L	25.0		86.3	20-120			
Surrogate: Nitrobenzene-d5	19.8		ug/L	25.0		79.3	27-120			
Surrogate: 2-Fluorobiphenyl	21.5		ug/L	25.0		86.0	33-120			
Surrogate: 2,4,6-Tribromophenol	38.5		ug/L	37.5		103	52-120			Q
Surrogate: p-Terphenyl-d14	22.3		ug/L	25.0		89.3	28-120			
LCS (BLC0628-BS1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 12:29						
Phenol	16.0	1.0	ug/L	25.0		63.9	35-120			
bis(2-chloroethyl) ether	18.6	1.0	ug/L	25.0		74.5	46.5-120			
2-Chlorophenol	16.1	1.0	ug/L	25.0		64.4	48-120			
1,3-Dichlorobenzene	15.1	1.0	ug/L	25.0		60.3	34.2-120			
1,4-Dichlorobenzene	16.1	1.0	ug/L	25.0		64.3	36-120			
Benzyl Alcohol	17.8	2.0	ug/L	25.0		71.1	27.4-120			
1,2-Dichlorobenzene	16.9	1.0	ug/L	25.0		67.6	38.4-120			
2-Methylphenol	15.9	1.0	ug/L	25.0		63.7	47.8-120			
2,2'-Oxybis(1-chloropropane)	19.2	1.0	ug/L	25.0		76.8	40.4-120			
4-Methylphenol	16.8	2.0	ug/L	25.0		67.4	52.3-120			
N-Nitroso-di-n-Propylamine	18.0	1.0	ug/L	25.0		72.2	51.4-120			
Hexachloroethane	16.4	2.0	ug/L	25.0		65.6	29.5-120			
Nitrobenzene	18.2	1.0	ug/L	25.0		72.8	51.5-120			
Isophorone	24.0	1.0	ug/L	25.0		96.2	62.3-128			
2-Nitrophenol	18.8	3.0	ug/L	25.0		75.2	58.6-124			
2,4-Dimethylphenol	33.5	3.0	ug/L	65.0		51.6	38.5-120			
Bis(2-Chloroethoxy)methane	21.4	1.0	ug/L	25.0		85.5	52.9-120			
Benzoic acid	105	20.0	ug/L	115		91.3	38.2-120			
2,4-Dichlorophenol	48.7	3.0	ug/L	65.0		74.9	43.6-120			
1,2,4-Trichlorobenzene	17.6	1.0	ug/L	25.0		70.6	38.6-120			
Naphthalene	18.3	1.0	ug/L	25.0		73.3	40.5-120			
4-Chloroaniline	44.2	5.0	ug/L	65.0		68.0	42.7-120			
Hexachlorobutadiene	18.3	3.0	ug/L	25.0		73.1	32.3-120			
4-Chloro-3-Methylphenol	48.9	3.0	ug/L	65.0		75.2	51.9-120			
2-Methylnaphthalene	19.2	1.0	ug/L	25.0		76.7	47.3-120			
Hexachlorocyclopentadiene	23.4	5.0	ug/L	65.0		36.0	23.3-120			Q
2,4,6-Trichlorophenol	50.2	3.0	ug/L	65.0		77.3	47-120			
2,4,5-Trichlorophenol	50.2	5.0	ug/L	65.0		77.2	48.4-120			



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0628-BS1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 12:29						
2-Chloronaphthalene	19.0	1.0	ug/L	25.0		76.0	47.7-123			
2-Nitroaniline	47.6	3.0	ug/L	65.0		73.2	56.8-120			
Dimethylphthalate	20.9	1.0	ug/L	25.0		83.6	65.2-125			
Acenaphthylene	19.7	1.0	ug/L	25.0		78.9	44.1-120			
2,6-Dinitrotoluene	54.0	3.0	ug/L	65.0		83.0	69.3-140			
3-Nitroaniline	47.8	3.0	ug/L	65.0		73.6	60.9-120			
Acenaphthene	19.4	1.0	ug/L	25.0		77.4	50.4-120			
2,4-Dinitrophenol	93.3	20.0	ug/L	115		81.1	33.7-183			
Dibenzofuran	20.9	1.0	ug/L	25.0		83.4	49.9-120			
4-Nitrophenol	43.5	10.0	ug/L	65.0		66.9	50.2-136			
2,4-Dinitrotoluene	52.5	3.0	ug/L	65.0		80.7	66.8-132			
Fluorene	20.6	1.0	ug/L	25.0		82.5	57.8-120			
Diethyl phthalate	23.1	1.0	ug/L	25.0		92.3	68.1-120			
4-Chlorophenylphenyl ether	20.8	1.0	ug/L	25.0		83.2	59.1-127			
4-Nitroaniline	49.4	3.0	ug/L	65.0		76.0	56-122			
4,6-Dinitro-2-methylphenol	92.2	10.0	ug/L	115		80.1	37.9-162			
N-Nitrosodiphenylamine	20.4	1.0	ug/L	25.0		81.5	59.6-120			
4-Bromophenyl phenyl ether	22.0	1.0	ug/L	25.0		88.0	59.6-120			
Hexachlorobenzene	20.2	1.0	ug/L	25.0		80.9	53.7-120			
Pentachlorophenol	51.1	10.0	ug/L	65.0		78.6	40.3-128			
Phenanthrene	19.5	1.0	ug/L	25.0		78.0	58.8-120			
Anthracene	17.9	1.0	ug/L	25.0		71.4	60.5-120			
Carbazole	18.4	1.0	ug/L	25.0		73.6	59.7-120			
Di-n-Butylphthalate	21.0	1.0	ug/L	25.0		84.1	71-120			
Fluoranthene	20.1	1.0	ug/L	25.0		80.4	66.7-120			
Pyrene	19.7	1.0	ug/L	25.0		78.7	62.7-127			
Butylbenzylphthalate	20.7	1.0	ug/L	25.0		82.6	67.4-128			
Benzo(a)anthracene	19.6	1.0	ug/L	25.0		78.5	58.3-128			
3,3'-Dichlorobenzidine	52.4	5.0	ug/L	65.0		80.7	34.1-120			Q
Chrysene	19.7	1.0	ug/L	25.0		78.8	58.9-120			
bis(2-Ethylhexyl)phthalate	21.3	3.0	ug/L	25.0		85.3	68.3-123			
Di-n-Octylphthalate	21.7	1.0	ug/L	25.0		87.0	61.5-120			
Benzo(a)pyrene	20.2	1.0	ug/L	25.0		80.7	70.6-120			
Indeno(1,2,3-cd)pyrene	20.2	1.0	ug/L	25.0		80.8	46.5-120			
Dibenzo(a,h)anthracene	20.2	1.0	ug/L	25.0		80.9	49.6-120			



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0628-BS1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 12:29						
Benzo(g,h,i)perylene	19.0	1.0	ug/L	25.0		76.2	37-120			
Benzo(a)fluoranthene, Total	37.6	2.0	ug/L	50.0		75.2	66.5-120			
1-Methylnaphthalene	20.8	1.0	ug/L	25.0		83.3	46.9-120			
Surrogate: 2-Fluorophenol	27.1		ug/L	37.5		72.2	33-120			
Surrogate: Phenol-d5	29.5		ug/L	37.5		78.5	38-120			
Surrogate: 2-Chlorophenol-d4	30.0		ug/L	37.5		79.9	41-120			
Surrogate: 1,2-Dichlorobenzene-d4	19.1		ug/L	25.0		76.5	20-120			
Surrogate: Nitrobenzene-d5	19.5		ug/L	25.0		78.2	27-120			
Surrogate: 2-Fluorobiphenyl	20.6		ug/L	25.0		82.2	33-120			
Surrogate: 2,4,6-Tribromophenol	40.2		ug/L	37.5		107	52-120			Q
Surrogate: p-Terphenyl-d14	21.2		ug/L	25.0		85.0	28-120			

LCS Dup (BLC0628-BSD1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 13:02						
Phenol	15.6	1.0	ug/L	25.0		62.6	35-120	2.09	30	
bis(2-chloroethyl) ether	17.8	1.0	ug/L	25.0		71.0	46.5-120	4.72	30	
2-Chlorophenol	15.5	1.0	ug/L	25.0		62.0	48-120	3.81	30	
1,3-Dichlorobenzene	14.0	1.0	ug/L	25.0		55.9	34.2-120	7.59	30	
1,4-Dichlorobenzene	14.8	1.0	ug/L	25.0		59.1	36-120	8.47	30	
Benzyl Alcohol	18.5	2.0	ug/L	25.0		73.9	27.4-120	3.83	30	
1,2-Dichlorobenzene	15.3	1.0	ug/L	25.0		61.3	38.4-120	9.70	30	
2-Methylphenol	14.7	1.0	ug/L	25.0		58.9	47.8-120	7.75	30	
2,2'-Oxybis(1-chloropropane)	18.2	1.0	ug/L	25.0		72.8	40.4-120	5.37	30	
4-Methylphenol	16.4	2.0	ug/L	25.0		65.8	52.3-120	2.44	30	
N-Nitroso-di-n-Propylamine	17.5	1.0	ug/L	25.0		69.8	51.4-120	3.30	30	
Hexachloroethane	14.9	2.0	ug/L	25.0		59.6	29.5-120	9.45	30	
Nitrobenzene	17.6	1.0	ug/L	25.0		70.6	51.5-120	3.16	30	
Isophorone	23.3	1.0	ug/L	25.0		93.1	62.3-128	3.32	30	
2-Nitrophenol	18.3	3.0	ug/L	25.0		73.3	58.6-124	2.60	30	
2,4-Dimethylphenol	30.2	3.0	ug/L	65.0		46.5	38.5-120	10.50	30	
Bis(2-Chloroethoxy)methane	20.6	1.0	ug/L	25.0		82.4	52.9-120	3.67	30	
Benzoic acid	100	20.0	ug/L	115		87.0	38.2-120	4.76	30	
2,4-Dichlorophenol	47.4	3.0	ug/L	65.0		73.0	43.6-120	2.63	30	
1,2,4-Trichlorobenzene	17.1	1.0	ug/L	25.0		68.3	38.6-120	3.35	30	
Naphthalene	17.6	1.0	ug/L	25.0		70.5	40.5-120	3.92	30	
4-Chloroaniline	41.4	5.0	ug/L	65.0		63.8	42.7-120	6.38	30	



Golder Associates
18300 NE Union Hill Road Suite 200
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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0628-BSD1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 13:02						
Hexachlorobutadiene	17.1	3.0	ug/L	25.0		68.4	32.3-120	6.59	30	
4-Chloro-3-Methylphenol	48.4	3.0	ug/L	65.0		74.5	51.9-120	1.00	30	
2-Methylnaphthalene	18.7	1.0	ug/L	25.0		74.7	47.3-120	2.66	30	
Hexachlorocyclopentadiene	21.6	5.0	ug/L	65.0		33.3	23.3-120	7.82	30	Q
2,4,6-Trichlorophenol	49.1	3.0	ug/L	65.0		75.5	47-120	2.28	30	
2,4,5-Trichlorophenol	48.9	5.0	ug/L	65.0		75.3	48.4-120	2.60	30	
2-Chloronaphthalene	18.3	1.0	ug/L	25.0		73.2	47.7-123	3.75	30	
2-Nitroaniline	47.1	3.0	ug/L	65.0		72.4	56.8-120	1.04	30	
Dimethylphthalate	20.2	1.0	ug/L	25.0		80.8	65.2-125	3.36	30	
Acenaphthylene	19.3	1.0	ug/L	25.0		77.1	44.1-120	2.33	30	
2,6-Dinitrotoluene	53.1	3.0	ug/L	65.0		81.8	69.3-140	1.53	30	
3-Nitroaniline	47.4	3.0	ug/L	65.0		73.0	60.9-120	0.83	30	
Acenaphthene	18.5	1.0	ug/L	25.0		74.0	50.4-120	4.50	30	
2,4-Dinitrophenol	93.0	20.0	ug/L	115		80.9	33.7-183	0.34	30	
Dibenzofuran	19.9	1.0	ug/L	25.0		79.6	49.9-120	4.65	30	
4-Nitrophenol	40.9	10.0	ug/L	65.0		62.9	50.2-136	6.22	30	
2,4-Dinitrotoluene	51.8	3.0	ug/L	65.0		79.7	66.8-132	1.33	30	
Fluorene	19.9	1.0	ug/L	25.0		79.6	57.8-120	3.59	30	
Diethyl phthalate	21.9	1.0	ug/L	25.0		87.8	68.1-120	5.06	30	
4-Chlorophenylphenyl ether	20.0	1.0	ug/L	25.0		80.1	59.1-127	3.82	30	
4-Nitroaniline	49.9	3.0	ug/L	65.0		76.7	56-122	0.94	30	
4,6-Dinitro-2-methylphenol	91.4	10.0	ug/L	115		79.5	37.9-162	0.84	30	
N-Nitrosodiphenylamine	19.2	1.0	ug/L	25.0		77.0	59.6-120	5.77	30	
4-Bromophenyl phenyl ether	21.3	1.0	ug/L	25.0		85.1	59.6-120	3.41	30	
Hexachlorobenzene	20.3	1.0	ug/L	25.0		81.3	53.7-120	0.50	30	
Pentachlorophenol	49.8	10.0	ug/L	65.0		76.7	40.3-128	2.53	30	
Phenanthrene	18.8	1.0	ug/L	25.0		75.1	58.8-120	3.84	30	
Anthracene	17.3	1.0	ug/L	25.0		69.0	60.5-120	3.38	30	
Carbazole	18.2	1.0	ug/L	25.0		72.9	59.7-120	0.89	30	
Di-n-Butylphthalate	20.7	1.0	ug/L	25.0		82.8	71-120	1.51	30	
Fluoranthene	19.9	1.0	ug/L	25.0		79.7	66.7-120	0.88	30	
Pyrene	19.6	1.0	ug/L	25.0		78.6	62.7-127	0.16	30	
Butylbenzylphthalate	20.6	1.0	ug/L	25.0		82.3	67.4-128	0.38	30	
Benzo(a)anthracene	19.7	1.0	ug/L	25.0		78.7	58.3-128	0.27	30	
3,3'-Dichlorobenzidine	50.0	5.0	ug/L	65.0		76.9	34.1-120	4.83	30	Q



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18300 NE Union Hill Road Suite 200
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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BLC0628 - EPA 8270E

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0628-BSD1)				Prepared: 23-Mar-2023 Analyzed: 31-Mar-2023 13:02						
Chrysene	19.2	1.0	ug/L	25.0		77.0	58.9-120	2.35	30	
bis(2-Ethylhexyl)phthalate	20.7	3.0	ug/L	25.0		82.7	68.3-123	3.13	30	
Di-n-Octylphthalate	21.5	1.0	ug/L	25.0		85.9	61.5-120	1.31	30	
Benzo(a)pyrene	19.6	1.0	ug/L	25.0		78.3	70.6-120	3.04	30	
Indeno(1,2,3-cd)pyrene	19.8	1.0	ug/L	25.0		79.2	46.5-120	2.02	30	
Dibenzo(a,h)anthracene	19.8	1.0	ug/L	25.0		79.1	49.6-120	2.28	30	
Benzo(g,h,i)perylene	18.7	1.0	ug/L	25.0		74.9	37-120	1.71	30	
Benzo(a)fluoranthene, Total	36.8	2.0	ug/L	50.0		73.7	66.5-120	1.96	30	
1-Methylnaphthalene	20.0	1.0	ug/L	25.0		79.8	46.9-120	4.28	30	
<i>Surrogate: 2-Fluorophenol</i>	24.7		ug/L	37.5		65.9	33-120			
<i>Surrogate: Phenol-d5</i>	28.0		ug/L	37.5		74.7	38-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	28.6		ug/L	37.5		76.3	41-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	18.1		ug/L	25.0		72.5	20-120			
<i>Surrogate: Nitrobenzene-d5</i>	18.9		ug/L	25.0		75.4	27-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	19.3		ug/L	25.0		77.3	33-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	38.8		ug/L	37.5		103	52-120			Q
<i>Surrogate: p-Terphenyl-d14</i>	20.8		ug/L	25.0		83.0	28-120			



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BLC0629 - EPA 8270E-SIM

Instrument: NT6 Analyst: JZ

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0629-BLK1)				Prepared: 29-Mar-2023 Analyzed: 31-Mar-2023 21:56						
1,4-Dioxane	ND	0.4	ug/L							U
<i>Surrogate: 1,4-Dioxane-d8</i>	8.12		ug/L	10.0	81.2		33.6-120			
LCS (BLC0629-BS1)				Prepared: 29-Mar-2023 Analyzed: 31-Mar-2023 22:20						
1,4-Dioxane	7.0	0.4	ug/L	10.0	69.7		39.9-120			
<i>Surrogate: 1,4-Dioxane-d8</i>	7.99		ug/L	10.0	79.9		33.6-120			
LCS Dup (BLC0629-BSD1)				Prepared: 29-Mar-2023 Analyzed: 31-Mar-2023 22:45						
1,4-Dioxane	7.4	0.4	ug/L	10.0	73.9		39.9-120	5.96	30	
<i>Surrogate: 1,4-Dioxane-d8</i>	8.55		ug/L	10.0	85.5		33.6-120			



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Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BLC0627 - NWTPH-HCID

Instrument: FID4 Analyst: JR/VTS/JW

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0627-BLK1)		Prepared: 24-Mar-2023 Analyzed: 28-Mar-2023 13:08								
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
<i>Surrogate: o-Terphenyl</i>	0.230		mg/L	0.225	102		50-150			
<i>Surrogate: n-Triacontane</i>	0.253		mg/L	0.225	112		50-150			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0630 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0630-BLK1)										
Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 18:29										
alpha-BHC	ND	0.025	ug/L							U
beta-BHC	ND	0.025	ug/L							U
gamma-BHC (Lindane)	ND	0.025	ug/L							U
delta-BHC	ND	0.025	ug/L							U
Heptachlor	ND	0.025	ug/L							U
Aldrin	ND	0.025	ug/L							U
Heptachlor Epoxide	ND	0.050	ug/L							U
trans-Chlordane (beta-Chlordane)	ND	0.025	ug/L							U
cis-Chlordane (alpha-chlordane)	ND	0.025	ug/L							U
Endosulfan I	ND	0.025	ug/L							U
4,4'-DDE	ND	0.050	ug/L							U
Dieldrin	ND	0.050	ug/L							U
Endrin	ND	0.050	ug/L							U
Endosulfan II	ND	0.050	ug/L							U
4,4'-DDD	ND	0.050	ug/L							U
Endrin Aldehyde	ND	0.050	ug/L							U
4,4'-DDT	ND	0.050	ug/L							U
Endosulfan Sulfate	ND	0.050	ug/L							U
Endrin Ketone	ND	0.050	ug/L							U
Methoxychlor	ND	0.250	ug/L							U
Toxaphene	ND	1.25	ug/L							U
<i>Surrogate: Decachlorobiphenyl</i>	0.338		ug/L	0.400		84.5	11-144			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.362		ug/L	0.400		90.5	11-144			
<i>Surrogate: Tetrachlorometaxylene</i>	0.303		ug/L	0.400		75.8	30-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.306		ug/L	0.400		76.5	30-120			

LCS (BLC0630-BS1)										
Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 18:47										
alpha-BHC [2C]	0.164	0.025	ug/L	0.200		82.0	54-124			
beta-BHC [2C]	0.164	0.025	ug/L	0.200		81.9	53-123			
gamma-BHC (Lindane) [2C]	0.169	0.025	ug/L	0.200		84.3	53-127			
delta-BHC [2C]	0.175	0.025	ug/L	0.200		87.7	53-122			
Heptachlor [2C]	0.160	0.025	ug/L	0.200		80.2	50-120			
Aldrin	0.152	0.025	ug/L	0.200		76.0	47-120			
Heptachlor Epoxide	0.168	0.050	ug/L	0.200		84.2	50-127			
trans-Chlordane (beta-Chlordane) [2C]	0.167	0.025	ug/L	0.200		83.5	47-127			



Golder Associates
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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0630 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLC0630-BS1)										
					Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 18:47					
cis-Chlordane (alpha-chlordane)	0.165	0.025	ug/L	0.200		82.4	51-132			
Endosulfan I	0.170	0.025	ug/L	0.200		84.8	48-137			
4,4'-DDE [2C]	0.343	0.050	ug/L	0.400		85.8	47-133			
Dieldrin [2C]	0.336	0.050	ug/L	0.400		83.9	55-130			
Endrin [2C]	0.344	0.050	ug/L	0.400		86.1	52-121			
Endosulfan II [2C]	0.333	0.050	ug/L	0.400		83.3	60-120			
4,4'-DDD [2C]	0.334	0.050	ug/L	0.400		83.4	60-120			
Endrin Aldehyde [2C]	0.324	0.050	ug/L	0.400		80.9	53-120			
4,4'-DDT [2C]	0.342	0.050	ug/L	0.400		85.4	57-122			
Endosulfan Sulfate [2C]	0.340	0.050	ug/L	0.400		85.1	56-120			
Endrin Ketone [2C]	0.359	0.050	ug/L	0.400		89.7	61-120			
Methoxychlor [2C]	1.67	0.250	ug/L	2.00		83.4	55-120			
<i>Surrogate: Decachlorobiphenyl</i>	0.307		ug/L	0.400		76.7	11-144			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.316		ug/L	0.400		79.0	11-144			
<i>Surrogate: Tetrachlorometaxylene</i>	0.309		ug/L	0.400		77.2	30-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.316		ug/L	0.400		79.0	30-120			
LCS Dup (BLC0630-BSD1)										
					Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 19:05					
alpha-BHC [2C]	0.168	0.025	ug/L	0.200		84.1	54-124	2.56	30	
beta-BHC [2C]	0.168	0.025	ug/L	0.200		84.0	53-123	2.55	30	
gamma-BHC (Lindane) [2C]	0.173	0.025	ug/L	0.200		86.7	53-127	2.73	30	
delta-BHC [2C]	0.181	0.025	ug/L	0.200		90.3	53-122	2.86	30	
Heptachlor [2C]	0.168	0.025	ug/L	0.200		83.9	50-120	4.58	30	
Aldrin	0.160	0.025	ug/L	0.200		79.9	47-120	5.08	30	
Heptachlor Epoxide	0.171	0.050	ug/L	0.200		85.5	50-127	1.51	30	
trans-Chlordane (beta-Chlordane) [2C]	0.170	0.025	ug/L	0.200		84.9	47-127	1.65	30	
cis-Chlordane (alpha-chlordane)	0.168	0.025	ug/L	0.200		83.9	51-132	1.77	30	
Endosulfan I	0.173	0.025	ug/L	0.200		86.3	48-137	1.78	30	
4,4'-DDE [2C]	0.348	0.050	ug/L	0.400		87.0	47-133	1.30	30	
Dieldrin [2C]	0.339	0.050	ug/L	0.400		84.8	55-130	1.07	30	
Endrin [2C]	0.371	0.050	ug/L	0.400		92.7	52-121	7.45	30	
Endosulfan II [2C]	0.335	0.050	ug/L	0.400		83.8	60-120	0.63	30	
4,4'-DDD [2C]	0.335	0.050	ug/L	0.400		83.8	60-120	0.42	30	
Endrin Aldehyde [2C]	0.320	0.050	ug/L	0.400		80.0	53-120	1.14	30	
4,4'-DDT [2C]	0.341	0.050	ug/L	0.400		85.3	57-122	0.11	30	



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Analysis by: Analytical Resources, LLC

Chlorinated Pesticides - Quality Control

Batch BLC0630 - EPA 8081B

Instrument: ECD6 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BLC0630-BSD1)				Prepared: 24-Mar-2023 Analyzed: 30-Mar-2023 19:05						
Endosulfan Sulfate [2C]	0.342	0.050	ug/L	0.400		85.6	56-120	0.52	30	
Endrin Ketone [2C]	0.352	0.050	ug/L	0.400		87.9	61-120	2.01	30	
Methoxychlor [2C]	1.67	0.250	ug/L	2.00		83.6	55-120	0.25	30	
<i>Surrogate: Decachlorobiphenyl</i>	0.291		ug/L	0.400		72.7	11-144			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.295		ug/L	0.400		73.7	11-144			
<i>Surrogate: Tetrachlorometaxylene</i>	0.319		ug/L	0.400		79.7	30-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.326		ug/L	0.400		81.5	30-120			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
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Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BLC0631 - EPA 8082A

Instrument: ECD7 Analyst: RJL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLC0631-BLK1)										
					Prepared: 27-Mar-2023 Analyzed: 31-Mar-2023 21:14					
Aroclor 1016	ND	0.010	ug/L							U
Aroclor 1221	ND	0.010	ug/L							U
Aroclor 1232	ND	0.010	ug/L							U
Aroclor 1242	ND	0.010	ug/L							U
Aroclor 1248	ND	0.010	ug/L							U
Aroclor 1254	ND	0.010	ug/L							U
Aroclor 1260	ND	0.010	ug/L							U
<i>Surrogate: Decachlorobiphenyl</i>	0.00868		ug/L	0.0200	43.4		29-120			
<i>Surrogate: Tetrachlorometaxylene</i>	0.00923		ug/L	0.0200	46.1		32-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.00872		ug/L	0.0200	43.6		29-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.00813		ug/L	0.0200	40.6		32-120			
LCS (BLC0631-BS1)										
					Prepared: 27-Mar-2023 Analyzed: 31-Mar-2023 21:35					
Aroclor 1016	0.030	0.010	ug/L	0.0500	59.4		54-120			
Aroclor 1260	0.029	0.010	ug/L	0.0500	57.0		51-128			
<i>Surrogate: Decachlorobiphenyl</i>	0.00933		ug/L	0.0200	46.7		29-120			
<i>Surrogate: Tetrachlorometaxylene</i>	0.0103		ug/L	0.0200	51.4		32-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.00909		ug/L	0.0200	45.5		29-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.00944		ug/L	0.0200	47.2		32-120			
LCS Dup (BLC0631-BSD1)										
					Prepared: 27-Mar-2023 Analyzed: 31-Mar-2023 21:56					
Aroclor 1016 [2C]	0.035	0.010	ug/L	0.0500	69.5		54-120	26.00	30	
Aroclor 1260	0.030	0.010	ug/L	0.0500	60.6		51-128	6.15	30	
<i>Surrogate: Decachlorobiphenyl</i>	0.00964		ug/L	0.0200	48.2		29-120			
<i>Surrogate: Tetrachlorometaxylene</i>	0.0108		ug/L	0.0200	54.1		32-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.00961		ug/L	0.0200	48.0		29-120			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	0.00976		ug/L	0.0200	48.8		32-120			



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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLC0855 - 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 (BLC0855-BLK1)					Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:41					
Mercury	ND	0.00100	mg/L							U
LCS (BLC0855-BS1)					Prepared: 31-Mar-2023 Analyzed: 05-Apr-2023 13:43					
Mercury	0.00181	0.00100	mg/L	0.00200		90.7	80-120			



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0101 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0101-BLK1)			Prepared: 05-Apr-2023 Analyzed: 06-Apr-2023 17:56								
Antimony	121	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 (BLD0101-BS1)			Prepared: 05-Apr-2023 Analyzed: 06-Apr-2023 18:01								
Antimony	121	0.0254	0.00300	mg/L	0.0250		102	80-120			
Lead	208	0.0261	0.0100	mg/L	0.0250		104	80-120			
Thallium	205	0.0258	0.00200	mg/L	0.0250		103	80-120			
Arsenic	75a	0.0255	0.00300	mg/L	0.0250		102	80-120			
Selenium	78	0.0810	0.0250	mg/L	0.0800		101	80-120			
Duplicate (BLD0101-DUP1)			Source: 23C0539-01		Prepared: 05-Apr-2023 Analyzed: 07-Apr-2023 03:52						
Antimony	121	ND	0.00300	mg/L		ND					U
Thallium	205	ND	0.00200	mg/L		ND					U
Duplicate (BLD0101-DUP2)			Source: 23C0539-01		Prepared: 05-Apr-2023 Analyzed: 08-Apr-2023 02:32						
Lead	208	ND	0.0100	mg/L		ND					U
Arsenic	75a	ND	0.00300	mg/L		ND					L, U
Selenium	78	ND	0.0250	mg/L		ND					U
Matrix Spike (BLD0101-MS1)			Source: 23C0539-01		Prepared: 05-Apr-2023 Analyzed: 07-Apr-2023 03:56						
Antimony	121	0.0259	0.00300	mg/L	0.0250	ND	104	75-125			
Thallium	205	0.0272	0.00200	mg/L	0.0250	ND	109	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BLD0101-MS2)			Source: 23C0539-01		Prepared: 05-Apr-2023 Analyzed: 08-Apr-2023 02:37						
Lead	208	0.0264	0.0100	mg/L	0.0250	ND	105	75-125			
Arsenic	75a	0.0268	0.00300	mg/L	0.0250	ND	106	75-125			
Selenium	78	0.0794	0.0250	mg/L	0.0800	ND	99.3	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BLD0101-MSD1)			Source: 23C0539-01		Prepared: 05-Apr-2023 Analyzed: 07-Apr-2023 04:02						
Antimony	121	0.0263	0.00300	mg/L	0.0250	ND	105	75-125	1.53	20	
Thallium	205	0.0271	0.00200	mg/L	0.0250	ND	108	75-125	0.47	20	



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0101 - EPA 200.8

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Matrix Spike Dup (BLD0101-MSD1) **Source: 23C0539-01** Prepared: 05-Apr-2023 Analyzed: 07-Apr-2023 04:02

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

Matrix Spike Dup (BLD0101-MSD2) **Source: 23C0539-01** Prepared: 05-Apr-2023 Analyzed: 08-Apr-2023 02:43

Lead	208	0.0259	0.0100	mg/L	0.0250	ND	104	75-125	1.66	20	
Arsenic	75a	0.0257	0.00300	mg/L	0.0250	ND	102	75-125	4.21	20	
Selenium	78	0.0770	0.0250	mg/L	0.0800	ND	96.2	75-125	3.19	20	

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



Golder Associates 18300 NE Union Hill Road Suite 200 Redmond WA, 98052-3333	Project: Landsburg Project Number: GL9231000007.2021 Project Manager: Gary Zimmerman	Reported: 03-May-2023 08:14
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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0254 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BLD0254-BLK1)										
					Prepared: 11-Apr-2023 Analyzed: 13-Apr-2023 12:50					
Aluminum	ND	1.00	mg/L							U
Barium	ND	0.500	mg/L							U
Beryllium	ND	0.0100	mg/L							U
Cadmium	ND	0.0020	mg/L							U
Calcium	ND	0.500	mg/L							U
Chromium	ND	0.0100	mg/L							U
Copper	ND	0.0030	mg/L							U
Iron	ND	0.200	mg/L							U
Magnesium	ND	0.500	mg/L							U
Manganese	ND	0.0100	mg/L							U
Nickel	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

Blank (BLD0254-BLK2)										
					Prepared: 11-Apr-2023 Analyzed: 27-Apr-2023 12:31					
Cobalt	ND	0.0100	mg/L							U
Zinc	ND	0.0200	mg/L							U

LCS (BLD0254-BS1)										
					Prepared: 11-Apr-2023 Analyzed: 13-Apr-2023 12:52					
Aluminum	2.10	1.00	mg/L	2.00		105	80-120			
Barium	2.09	0.500	mg/L	2.00		104	80-120			
Beryllium	0.529	0.0100	mg/L	0.500		106	80-120			
Cadmium	0.538	0.0020	mg/L	0.500		108	80-120			
Calcium	10.4	0.500	mg/L	10.0		104	80-120			
Chromium	0.529	0.0100	mg/L	0.500		106	80-120			
Copper	0.532	0.0030	mg/L	0.500		106	80-120			
Iron	2.20	0.200	mg/L	2.00		110	80-120			
Magnesium	10.3	0.500	mg/L	10.0		103	80-120			
Manganese	0.529	0.0100	mg/L	0.500		106	80-120			
Nickel	0.518	0.0100	mg/L	0.500		104	80-120			
Potassium	10.3	0.500	mg/L	10.0		103	80-120			
Silver	0.540	0.0050	mg/L	0.500		108	80-120			
Sodium	10.4	0.500	mg/L	10.0		104	80-120			



Golder Associates
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Redmond WA, 98052-3333

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0254 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BLD0254-BS1)					Prepared: 11-Apr-2023 Analyzed: 13-Apr-2023 12:52					
Vanadium	0.546	0.0030	mg/L	0.500		109	80-120			
LCS (BLD0254-BS2)					Prepared: 11-Apr-2023 Analyzed: 27-Apr-2023 12:33					
Cobalt	0.518	0.0100	mg/L	0.500		104	80-120			
Zinc	0.496	0.0200	mg/L	0.500		99.2	80-120			
Duplicate (BLD0254-DUP1)					Source: 23C0539-01 Prepared: 11-Apr-2023 Analyzed: 13-Apr-2023 13:10					
Aluminum	ND	1.00	mg/L		ND					U
Barium	ND	0.500	mg/L		ND					U
Beryllium	ND	0.0100	mg/L		ND					U
Cadmium	ND	0.0020	mg/L		ND					U
Calcium	76.0	0.500	mg/L		75.5			0.60	20	
Chromium	ND	0.0100	mg/L		ND					U
Copper	ND	0.0030	mg/L		ND					U
Iron	1.47	0.200	mg/L		1.44			1.89	20	
Magnesium	40.5	0.500	mg/L		39.8			1.81	20	
Manganese	0.169	0.0100	mg/L		0.168			0.47	20	
Nickel	ND	0.0100	mg/L		ND					U
Potassium	2.22	0.500	mg/L		2.26			2.00	20	
Silver	ND	0.0050	mg/L		ND					U
Sodium	13.4	0.500	mg/L		13.2			0.94	20	
Vanadium	ND	0.0030	mg/L		ND					U
Duplicate (BLD0254-DUP2)					Source: 23C0539-01 Prepared: 11-Apr-2023 Analyzed: 27-Apr-2023 12:51					
Cobalt	ND	0.0100	mg/L		ND					U
Zinc	ND	0.0200	mg/L		ND					U
Matrix Spike (BLD0254-MS1)					Source: 23C0539-01 Prepared: 11-Apr-2023 Analyzed: 13-Apr-2023 13:13					
Aluminum	2.09	1.00	mg/L	2.00	ND	105	75-125			
Barium	2.34	0.500	mg/L	2.00	ND	103	75-125			
Beryllium	0.535	0.0100	mg/L	0.500	ND	107	75-125			
Cadmium	0.531	0.0020	mg/L	0.500	ND	106	75-125			
Calcium	84.5	0.500	mg/L	10.0	75.5	89.3	75-125			
Chromium	0.528	0.0100	mg/L	0.500	ND	106	75-125			
Copper	0.539	0.0030	mg/L	0.500	ND	108	75-125			
Iron	3.62	0.200	mg/L	2.00	1.44	109	75-125			



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Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0254 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BLD0254-MS1)		Source: 23C0539-01		Prepared: 11-Apr-2023		Analyzed: 13-Apr-2023 13:13				
Magnesium	50.3	0.500	mg/L	10.0	39.8	105	75-125			
Manganese	0.682	0.0100	mg/L	0.500	0.168	103	75-125			
Nickel	0.506	0.0100	mg/L	0.500	ND	101	75-125			
Potassium	12.6	0.500	mg/L	10.0	2.26	103	75-125			
Silver	0.545	0.0050	mg/L	0.500	ND	109	75-125			
Sodium	23.3	0.500	mg/L	10.0	13.2	101	75-125			
Vanadium	0.549	0.0030	mg/L	0.500	ND	110	75-125			

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

Matrix Spike (BLD0254-MS2)		Source: 23C0539-01		Prepared: 11-Apr-2023		Analyzed: 27-Apr-2023 12:54				
Cobalt	0.504	0.0100	mg/L	0.500	ND	101	75-125			
Zinc	0.490	0.0200	mg/L	0.500	ND	97.9	75-125			

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

Matrix Spike Dup (BLD0254-MSD1)		Source: 23C0539-01		Prepared: 11-Apr-2023		Analyzed: 13-Apr-2023 13:16				
Aluminum	2.08	1.00	mg/L	2.00	ND	104	75-125	0.40	20	
Barium	2.34	0.500	mg/L	2.00	ND	103	75-125	0.07	20	
Beryllium	0.528	0.0100	mg/L	0.500	ND	106	75-125	1.28	20	
Cadmium	0.525	0.0020	mg/L	0.500	ND	105	75-125	1.12	20	
Calcium	84.4	0.500	mg/L	10.0	75.5	88.3	75-125	0.12	20	
Chromium	0.521	0.0100	mg/L	0.500	ND	104	75-125	1.26	20	
Copper	0.529	0.0030	mg/L	0.500	ND	106	75-125	1.91	20	
Iron	3.58	0.200	mg/L	2.00	1.44	107	75-125	1.16	20	
Magnesium	49.6	0.500	mg/L	10.0	39.8	98.3	75-125	1.40	20	
Manganese	0.681	0.0100	mg/L	0.500	0.168	103	75-125	0.16	20	
Nickel	0.500	0.0100	mg/L	0.500	ND	100	75-125	1.17	20	
Potassium	12.5	0.500	mg/L	10.0	2.26	103	75-125	0.46	20	
Silver	0.540	0.0050	mg/L	0.500	ND	108	75-125	0.85	20	
Sodium	23.3	0.500	mg/L	10.0	13.2	101	75-125	0.27	20	
Vanadium	0.544	0.0030	mg/L	0.500	ND	109	75-125	0.95	20	

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

Matrix Spike Dup (BLD0254-MSD2)		Source: 23C0539-01		Prepared: 11-Apr-2023		Analyzed: 27-Apr-2023 12:57				
Cobalt	0.503	0.0100	mg/L	0.500	ND	101	75-125	0.20	20	
Zinc	0.482	0.0200	mg/L	0.500	ND	96.5	75-125	1.48	20	



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Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BLD0254 - EPA 6010D

Instrument: ICP3 Analyst: DOE

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Matrix Spike Dup (BLD0254-MSD2) **Source: 23C0539-01** Prepared: 11-Apr-2023 Analyzed: 27-Apr-2023 12:57

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



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Certified Analyses included in this Report

Analyte	Certifications
<i>EPA 200.8 in Water</i>	
Lead-208	NELAP,WADOE,WA-DW,DoD-ELAP
Antimony-121	NELAP,WADOE,WA-DW,DoD-ELAP
Thallium-205	NELAP,WADOE,WA-DW,DoD-ELAP
<i>EPA 200.8 UCT-KED in Water</i>	
Arsenic-75a	NELAP,WADOE,WA-DW,DoD-ELAP
Selenium-78	NELAP,WADOE,WA-DW,DoD-ELAP
<i>EPA 6010D in Water</i>	
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
Nickel	WADOE,NELAP,DoD-ELAP,ADEC
Vanadium	WADOE,NELAP,DoD-ELAP,ADEC
Zinc	WADOE,NELAP,DoD-ELAP
<i>EPA 7470A in Water</i>	
Mercury	WADOE,NELAP,DoD-ELAP
<i>EPA 8081B in Water</i>	
alpha-BHC	DoD-ELAP,NELAP,WADOE
alpha-BHC [2C]	DoD-ELAP,NELAP,WADOE



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beta-BHC	DoD-ELAP,NELAP,WADOE
beta-BHC [2C]	DoD-ELAP,NELAP,WADOE
gamma-BHC (Lindane)	DoD-ELAP,NELAP,WADOE
gamma-BHC (Lindane) [2C]	DoD-ELAP,NELAP,WADOE
delta-BHC	DoD-ELAP,NELAP,WADOE
delta-BHC [2C]	DoD-ELAP,NELAP,WADOE
Heptachlor	DoD-ELAP,NELAP,WADOE
Heptachlor [2C]	DoD-ELAP,NELAP,WADOE
Aldrin	DoD-ELAP,NELAP,WADOE
Aldrin [2C]	DoD-ELAP,NELAP,WADOE
Heptachlor Epoxide	DoD-ELAP,NELAP,WADOE
Heptachlor Epoxide [2C]	DoD-ELAP,NELAP,WADOE
trans-Chlordane (beta-Chlordane)	DoD-ELAP,NELAP,WADOE
trans-Chlordane (beta-Chlordane)	DoD-ELAP,NELAP,WADOE
cis-Chlordane (alpha-chlordane)	DoD-ELAP,NELAP,WADOE
cis-Chlordane (alpha-chlordane)	DoD-ELAP,NELAP,WADOE
Endosulfan I	DoD-ELAP,NELAP,WADOE
Endosulfan I [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDE	DoD-ELAP,NELAP,WADOE
4,4'-DDE [2C]	DoD-ELAP,NELAP,WADOE
Dieldrin	DoD-ELAP,NELAP,WADOE
Dieldrin [2C]	DoD-ELAP,NELAP,WADOE
Endrin	DoD-ELAP,NELAP,WADOE
Endrin [2C]	DoD-ELAP,NELAP,WADOE
Endosulfan II	DoD-ELAP,NELAP,WADOE
Endosulfan II [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDD	DoD-ELAP,NELAP,WADOE
4,4'-DDD [2C]	DoD-ELAP,NELAP,WADOE
Endrin Aldehyde	DoD-ELAP,NELAP,WADOE
Endrin Aldehyde [2C]	DoD-ELAP,NELAP,WADOE
4,4'-DDT	DoD-ELAP,NELAP,WADOE
4,4'-DDT [2C]	DoD-ELAP,NELAP,WADOE
Endosulfan Sulfate	DoD-ELAP,NELAP,WADOE



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Endosulfan Sulfate [2C]	DoD-ELAP,NELAP,WADOE
Endrin Ketone	DoD-ELAP,NELAP,WADOE
Endrin Ketone [2C]	DoD-ELAP,NELAP,WADOE
Methoxychlor	DoD-ELAP,NELAP,WADOE
Methoxychlor [2C]	DoD-ELAP,NELAP,WADOE
Toxaphene	DoD-ELAP,NELAP,WADOE
Toxaphene [2C]	DoD-ELAP,NELAP,WADOE

EPA 8082A in Water

Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroeth	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE



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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



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1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE

EPA 8270E in Water

Phenol	WADOE,DoD-ELAP,NELAP
bis(2-chloroethyl) ether	WADOE,DoD-ELAP,NELAP
2-Chlorophenol	WADOE,DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP



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1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
Benzyl Alcohol	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
2-Methylphenol	WADOE,DoD-ELAP,NELAP
2,2'-Oxybis(1-chloropropane)	DoD-ELAP
4-Methylphenol	WADOE,DoD-ELAP,NELAP
N-Nitroso-di-n-Propylamine	WADOE,DoD-ELAP,NELAP
Hexachloroethane	WADOE,DoD-ELAP,NELAP
Nitrobenzene	WADOE,DoD-ELAP,NELAP
Isophorone	WADOE,DoD-ELAP,NELAP
2-Nitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dimethylphenol	WADOE,DoD-ELAP,NELAP
Bis(2-Chloroethoxy)methane	WADOE,DoD-ELAP,NELAP
Benzoic acid	WADOE,DoD-ELAP,NELAP
2,4-Dichlorophenol	WADOE,DoD-ELAP,NELAP
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP
Naphthalene	WADOE,ADEC,DoD-ELAP,NELAP
4-Chloroaniline	WADOE,DoD-ELAP,NELAP
Hexachlorobutadiene	WADOE,DoD-ELAP,NELAP
4-Chloro-3-Methylphenol	WADOE,DoD-ELAP,NELAP
2-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP
Hexachlorocyclopentadiene	WADOE,DoD-ELAP,NELAP
2,4,6-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2,4,5-Trichlorophenol	WADOE,DoD-ELAP,NELAP
2-Chloronaphthalene	WADOE,DoD-ELAP,NELAP
2-Nitroaniline	WADOE,DoD-ELAP,NELAP
Dimethylphthalate	WADOE,DoD-ELAP,NELAP
Acenaphthylene	WADOE,ADEC,DoD-ELAP,NELAP
2,6-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
3-Nitroaniline	WADOE,DoD-ELAP,NELAP
Acenaphthene	WADOE,ADEC,DoD-ELAP,NELAP
2,4-Dinitrophenol	WADOE,DoD-ELAP,NELAP
Dibenzofuran	WADOE,ADEC,DoD-ELAP,NELAP



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4-Nitrophenol	WADOE,DoD-ELAP,NELAP
2,4-Dinitrotoluene	WADOE,DoD-ELAP,NELAP
Fluorene	WADOE,ADEC,DoD-ELAP,NELAP
Diethyl phthalate	WADOE,DoD-ELAP,NELAP
4-Chlorophenylphenyl ether	WADOE,DoD-ELAP,NELAP
4-Nitroaniline	WADOE,DoD-ELAP,NELAP
4,6-Dinitro-2-methylphenol	WADOE,DoD-ELAP,NELAP
N-Nitrosodiphenylamine	DoD-ELAP
4-Bromophenyl phenyl ether	WADOE,DoD-ELAP,NELAP
Hexachlorobenzene	WADOE,DoD-ELAP,NELAP
Pentachlorophenol	WADOE,DoD-ELAP,NELAP
Phenanthrene	WADOE,ADEC,DoD-ELAP,NELAP
Anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Carbazole	WADOE,ADEC,DoD-ELAP,NELAP
Di-n-Butylphthalate	WADOE,DoD-ELAP,NELAP
Fluoranthene	WADOE,ADEC,DoD-ELAP,NELAP
Pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Butylbenzylphthalate	WADOE,DoD-ELAP,NELAP
Benzo(a)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
3,3'-Dichlorobenzidine	DoD-ELAP
Chrysene	WADOE,ADEC,DoD-ELAP,NELAP
bis(2-Ethylhexyl)phthalate	WADOE,DoD-ELAP,NELAP
Di-n-Octylphthalate	WADOE,DoD-ELAP,NELAP
Benzo(a)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Indeno(1,2,3-cd)pyrene	WADOE,ADEC,DoD-ELAP,NELAP
Dibenzo(a,h)anthracene	WADOE,ADEC,DoD-ELAP,NELAP
Benzo(g,h,i)perylene	WADOE,ADEC,DoD-ELAP,NELAP
Benzofluoranthenes, Total	WADOE,ADEC,DoD-ELAP,NELAP
1-Methylnaphthalene	WADOE,ADEC,DoD-ELAP,NELAP

EPA 8270E-SIM in Water

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

NWTPH-HCID in Water

Gasoline Range Organics (Tol-C NELAP,DoD-ELAP,WADOE



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18300 NE Union Hill Road Suite 200

Redmond WA, 98052-3333

Project: Landsburg

Project Number: GL9231000007.2021

Project Manager: Gary Zimmerman

Reported:

03-May-2023 08:14

Diesel Range Organics (C12-C2

NELAP,DoD-ELAP,WADOE

Motor Oil Range Organics (C24-

NELAP,DoD-ELAP,WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2023
WADOE	WA Dept of Ecology	C558	06/30/2023
WA-DW	Ecology - Drinking Water	C558	06/30/2023



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

Project: Landsburg
Project Number: GL9231000007.2021
Project Manager: Gary Zimmerman

Reported:
03-May-2023 08:14

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)
- J Estimated concentration value detected below the reporting limit.
- L Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to \pm RL instead of 20% RPD
- M Estimated value for a GC/MS analyte detected and confirmed by an analyst but with low spectral match parameters.
- P1 The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
- 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.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-2-0323

(duplicate LMW-2-0323-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 March 20, 2023 **Time** 09:55 (duplicate 10:05)

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: 6.11 ft BTOC

Screened Interval: 27.9' - 38.1' BGS

Sand Pack Interval: 24.8' - 38.1' BGS

Packer Depth: N/A

Sample Description Clear, slight sulfur odor, no sheen

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-2

Date 03/20/2023

Time Begin Purge 09:23

Time Collect Sample 09:55 (duplicate 10:05)

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
6.12	09:30	6.82	1,212	10.7	0.46	50.9	2.38
6.12	09:35	6.84	1,211	10.7	0.13	35.3	7.33
6.12	09:40	6.84	1,209	10.7	0.1	26.9	1.18
6.12	09:45	6.84	1,208	10.7	0.1	19.5	2.08
6.12	09:50	6.83	1,205	10.7	0.1	10.4	0.96
6.12	09:55	6.83	1,206	10.7	0.08	9.6	1.11

Comments:

Grundfos: ~80 Hz
 Packer: N/A
 Tank: N/A
 Throttle: N/A
 CPM: N/A
 CID: N/A
 Flow Rate: 1400 mL/min

Sampler AKR

Date March 20, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-3-0323

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 March 22, 2023 **Time** 11:48

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: 11.25 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 odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-3

Date 03/22/2023

Time Begin Purge 10:55

Time Collect Sample 11:48

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
16.41	11:10	7.98	557.8	11.2	0.47	37.7	1.45
16.7	11:15	7.98	559.5	11.5	0.1	32.8	0.86
15.66	11:20	7.96	557.8	11.7	0.13	31.8	0.59
15.49	11:25	7.98	556	11.5	0.1	30.2	0.82
15.29	11:30	7.97	560	11.7	0.13	27.1	0.95
15.61	11:35	7.98	556.8	11.4	1.11	24	1.71
16.98	11:40	7.92	559.5	11.4	0.22	22.8	0.87
16.7	11:45	7.98	560.4	11.7	0.16	20.8	0.71
15.74	11:48	7.91	559.9	11.7	0.11	19.6	0.71

Comments:

Discovered water level was fluctuating due to leaky attachments. Corrected on site.

Grundfos: ~135 Hz

Packer: 130 psi

Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 2400 mL/min

Sampler 

Date March 22, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-4-0323

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 March 20, 2023 **Time** 15:50

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: 8.75 ft BTOC

Screened Interval: 195' - 209.7' BGS

Sand Pack Interval: 189' - 209.7' BGS

Packer Depth: 187.3' BGS

Sample Description Clear, slight sulfur odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-4

Date 03/20/2023

Time Begin Purge 15:23

Time Collect Sample 15:50

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
8.75	15:25	7.26	1,192	9.8	2.44	22.7	0.77
8.75	15:30	6.91	1,209	10	0.37	22.7	0.72
8.75	15:35	6.88	1,215	10.1	0.22	20.5	1.10
8.75	15:40	6.86	1,219	10.1	0.19	17.1	2.06
8.75	15:45	6.86	1,219	10.2	0.17	13.5	0.61
8.75	15:50	6.86	1,217	10.3	0.27	8.1	0.61

Comments:

Grundfos: 80 Hz

Packer: 110 psi

Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 1200 mL/min

Sampler guz

Date March 20, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-5-0323

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 March 22, 2023 **Time** 13:20

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: 12.75 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, slight sulfur odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-5

Date 03/22/2023

Time Begin Purge 12:48

Time Collect Sample 13:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
12.78	12:55	7.05	1,227	10.7	0.17	35.6	3.08
12.73	13:00	7.09	1,230	10.8	0.09	16.6	2.69
12.75	13:05	7.09	1,230	10.7	0.1	11.3	1.8
12.72	13:10	7.09	1,233	10.7	0.08	3.7	3.68
12.74	13:15	7.14	1,224	10.8	0.11	-1.6	3.98
12.75	13:20	7.13	1,224	10.8	0.12	-5.8	0.88

Comments:

135 Hz at 5,400 mL/min at 12:48. Slowed at 13:00 to 4,200 mL/min.

Grundfos: ~120 Hz

Packer: 110 psi


Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 4200 mL/min

Sampler 

Date March 22, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-6-0323

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 March 21, 2023 **Time** 09:10

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: 23.16 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 odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-6

Date 03/21/2023

Time Begin Purge 09:35

Time Collect Sample 10:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
25.71	09:40	6.75	255.7	9.5	0.52	63.7	5.98
32.81	09:45	6.92	256.9	9.7	0.77	42.0	2.75
35.16	09:50	6.93	257.7	9.7	0.69	30.0	2.06
36.42	09:55	6.94	258.1	9.7	0.59	23.9	1.64
37.86	10:00	6.94	259.2	9.8	0.49	16.4	1.80
39.17	10:05	6.94	259.3	9.8	0.52	11.0	1.24
39.89	10:10	6.95	260.4	9.8	0.4	7.3	1.41

Comments:

180 Hz and 3300 mL/min at first, slowed to 170 Hz and 3000 mL/min at 8:45am.

Grundfos: 180 Hz

Packer: 110 psi

Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 3000 mL/min

Sampler 

Date March 21, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

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

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

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

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

Type of Sampler Dedicated Pump Grundfos

Date March 21, 2023 **Time** 15:08

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: 225.76 ft BTOC

Screened Interval: 239.6' - 253.7' BGS

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-7

Date 03/21/2023

Time Begin Purge 14:20

Time Collect Sample 15:08

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
225.82	14:25	7.46	493.6	12.6	0.39	64.9	6.96
225.82	14:30	7.44	493.8	12.8	0.27	56.1	4.10
225.82	14:35	7.44	494	12.8	0.25	43.9	2.37
225.82	14:40	7.38	515.1	12.9	0.25	27.4	2.13
225.82	14:45	7.3	539.8	13	0.21	9.5	1.53
225.82	14:50	7.3	548.8	13	0.19	-0.2	1.24
225.82	14:55	7.28	574	12.9	0.18	-12.1	1.21
225.82	15:00	7.24	582.4	13	0.16	-19.3	1.08
225.82	15:05	7.22	597.1	12.9	0.18	-24.9	0.84
225.82	15:08	7.2	601.3	12.9	0.14	-27.0	0.92

Comments:

No water pumping at 320 Hz. Increased to 340 Hz.

Grundfos: 340 Hz

Packer: N/A


Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 3000 mL/min

Sampler 

Date March 21, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-8-0323

Sampling Location Groundwater Monitoring Well - end dedicated sampling tube

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

Type of Sampler _____

Date March 22, 2023 **Time** 14:30

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: 3.69 ft BTOC

Screened Interval: 8' - 13' BGS

Sand Pack Interval: 6' - 13' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-8

Date 03/22/2023

Time Begin Purge 14:02

Time Collect Sample 14:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
5.83	14:10	7.16	663.9	10	0.11	-24.4	30.5
6.21	14:15	7.23	671.3	10	0.13	-31.2	21.9
6.36	14:20	7.22	691.9	10.1	0.18	-37.4	15.8
6.37	14:25	7.32	710	10.1	0.13	-41.9	13.3
6.4	14:30	7.25	730	10.1	0.13	-46.3	9.76

Comments:

Grundfos: N/A

Packer: N/A

Tank: N/A

Throttle: N/A

CPM: N/A

CID: N/A

Flow Rate: 250 mL/min

Sampler 8484

Date March 22, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-9-0323

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 March 22, 2023 **Time** 10:15

Media Water **Station** LMW-9

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

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

Static Water Level: 97.83 ft BTOC

Screened Interval: 149' - 159' BGS

Sand Pack Interval: 143.5' - 159' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-9

Date 03/22/2023

Time Begin Purge 09:41

Time Collect Sample 10:15

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
97.86	09:45	6.97	1,181	10.1	1.08	70.2	3.16
97.6	09:50	7.01	1,181	10.2	0.49	49.7	1.58
97.86	09:55	7.03	1,179	10.2	0.36	26.8	1.97
97.86	10:00	7.03	1,182	10.2	0.33	13.6	1.24
98.87	10:05	7.04	1,182	10.2	0.28	6.6	1.46
98.87	10:10	7.05	1,181	10.2	0.3	-2.4	1.1
98.87	10:15	7.06	1,182	10.3	0.3	-7.1	1.35

Comments:

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

Sampler *BJB*

Date March 22, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-10-0323

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 March 20, 2023 **Time** 14:45

Media Water **Station** LMW-10

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

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

Static Water Level: 0.42 ft BTOC

Screened Interval: 267' - 289' BGS

Sand Pack Interval: 258' - 289' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-10

Date 03/20/2023

Time Begin Purge 14:00

Time Collect Sample 14:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
1.82	14:05	8.72	0.14	9.4	0.14	14.6	1.36
2.66	14:10	8.73	434.7	9.3	0.11	0.2	0.93
3.38	14:15	8.72	434.3	9.4	0.1	-8.8	0.95
3.9	14:20	8.72	434.1	9.4	0.14	-18.6	0.89
4.31	14:25	8.72	433.7	9.4	0.17	-24.5	0.86
5.07	14:30	8.71	433.7	9.4	0.32	-36.2	1.55
5.72	14:35	8.74	433.3	9.6	0.24	-47.9	0.98
6	14:38	8.74	433	9.5	0.2	-54.2	0.67
6.34	14:41	8.74	432.7	9.4	0.21	-60.0	0.94

Comments:

Grundfos: N/A

Packer: N/A

Tank: 110

Throttle: 40

CPM: 2

CID: 50

Flow Rate: 400 mL/min

Sampler 

Date March 20, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-11-0323

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 March 21, 2023 **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: 155.61 ft BTOC

Screened Interval: 696' - 707' BGS

Sand Pack Interval: 688' - 707' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-11

Date 03/21/2023

Time Begin Purge 12:38

Time Collect Sample 13:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
155.6	12:40	7.59	537.5	10.2	4.29	40.7	0.93
155.6	12:45	7.39	557.2	10.1	1.2	29.9	1.35
155.6	12:50	7.42	556.3	10.2	0.58	13.6	0.79
155.6	12:55	7.43	557.7	10.1	0.45	5.8	0.78
155.6	13:00	7.42	558.2	10.3	0.6	-1.9	0.76
155.6	13:05	7.42	558.5	10.1	0.53	-6.4	1.99
155.6	13:10	7.42	558.4	10	0.45	-11	0.72

Comments:

Grundfos: N/A
 Packer: N/A
 Tank: 130
 Throttle: 110
 CPM: 1
 CID: 15
 Flow Rate: 450 mL/min

Sampler 

Date March 21, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-12-0323

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 March 20, 2023 **Time** 11:50

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: 6.71 ft BTOC

Screened Interval: 15' - 25' BGS

Sand Pack Interval: 11' - 25' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-12

Date 03/20/2023

Time Begin Purge 11:17

Time Collect Sample 11:50

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
6.71	11:20	6.45	391.2	8.2	0.26	25.9	2.52
6.71	11:25	6.54	390.1	8.2	0.17	16.2	2.24
6.71	11:30	6.57	391	8.2	0.17	12.2	2.11
6.71	11:35	6.66	486.4	8.5	0.12	7.2	5.46
6.71	11:40	6.7	531.7	8.6	0.09	2.6	10.1
6.71	11:45	6.71	559.9	8.6	0.11	-1.8	4.43

Comments:

Grundfos: N/A

Packer: N/A

Tank: 110

Throttle: 20

CPM: 2

CID: 47

Flow Rate: 400 mL/min

Sampler 

Date March 20, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-13R-0323

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 March 20, 2023 **Time** 13:00

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: 7.3 ft BTOC

Screened Interval: 115' - 140' BGS

Sand Pack Interval: 110' - 150' BGS

Packer Depth: N/A

Sample Description clear, no odor, no sheen

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-13R

Date 03/20/2023

Time Begin Purge 12:28

Time Collect Sample 13:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
7.34	12:30	7.42	1,042	9.1	6.9	7.6	2.14
7.34	12:35	7.35	1,092	9.1	1.23	-16.4	1.83
7.44	12:40	7.35	1,091	9.1	1.06	-19.2	0.83
7.43	12:45	7.34	1,091	9.2	0.81	-28.0	0.47
7.43	12:50	7.34	1,092	9.3	0.64	-35.1	0.65
7.4	12:55	7.35	1,092	9.3	0.52	-40.2	0.46
7.44	13:00	7.35	1,092	9.3	0.45	-43.6	0.48

Comments:

Grundfos: N/A
 Packer: N/A
 Tank: 110
 Throttle: 35
 CPM: 2
 CID: 48
 Flow Rate: 300 mL/min

Sampler *dl*

Date March 20, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-14-0323

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 March 21, 2023 **Time** 10:30

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: 163.41 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 odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-14

Date 03/21/2023

Time Begin Purge 09:58

Time Collect Sample 10:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
163.5	10:00	6.74	1,000	10.6	1.36	81.9	3.29
163.54	10:05	6.71	1,305	10.1	0.21	41.7	4.33
163.54	10:10	6.71	1,253	10.1	0.2	26.0	3.43
163.55	10:15	6.72	1,239	10.1	0.16	17.2	2.60
163.55	10:20	6.72	1,241	10.1	0.17	10.4	3.10
163.55	10:25	6.73	1,249	10.1	0.17	6.1	2.74
163.55	10:30	6.73	1,223	10.1	0.18	1.9	2.58

Comments:

Grundfos: N/A
 Packer: N/A
 Tank: 140
 Throttle: 115
 CPM: 2
 CID: 49
 Flow Rate: 500 mL/min

Sampler *AKL*

Date March 21, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-15-0323

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 March 21, 2023 **Time** 11:55

Media Water **Station** LMW-15

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

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

Static Water Level: 149.59 ft BTOC

Screened Interval: 235' - 245' BGS

Sand Pack Interval: 231' - 245' BGS

Packer Depth: N/A

Sample Description Clear, no odor, no sheen.

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

Aliquot Amount	Analysis	Container	Preservation / Amount
3-40 mL	VOA	VOA vial	HCl
1-500 mL	Total Metals	HDPE	HNO3
4-500 mL	TPH-HCID, -Dx (HOLD)	Glass amber	None
2-40 mL	TPH-Gx (HOLD)	VOA vial	HCl
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-15

Date 03/21/2023

Time Begin Purge 11:19

Time Collect Sample 11:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
149.53	11:20	7.33	511.1	9.9	5.26	46.7	2.64
149.55	11:25	7.44	503.6	9.6	0.92	2.1	2.87
149.55	11:30	7.53	515.9	9.5	0.54	-44.1	2.17
149.55	11:35	7.54	516.4	9.5	0.48	-64.4	1.50
149.55	11:40	7.56	518	9.6	0.46	-78.5	1.77
149.55	11:45	7.57	518.4	9.6	0.41	-85.0	2.01
149.55	11:50	7.58	518.4	9.6	0.41	-90.3	1.81
149.55	11:55	7.59	519	9.6	1.31	-95.4	2.27

Comments:

Grundfos: N/A

Packer: N/A

Tank: 130

Throttle: 95

CPM: 2

CID: 53

Flow Rate: 450 mL/min

Sampler 

Date March 21, 2023

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-007.2023

Site Location Ravensdale, WA **Sample ID** LMW-FB-0323

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 March 22, 2023 **Time** 14:45

Media Lab-provided DI **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: N/A

Screened Interval: N/A

Sand Pack Interval: N/A

Packer Depth: N/A

Sample Description Lab-provided DI water poured directly into sample containers.

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
2-1000 mL	PCBs	Glass amber	None
2-1000 mL	Pesticides	Glass amber	None
2-1000 mL	SVOCs	Glass amber	None
2-500 mL	1,4-dioxane	500 mL amber bottles	None

SAMPLE INTEGRITY DATA SHEET

Well ID LMW-FB

Date 03/22/2023

Time Begin Purge N/A

Time Collect Sample 14:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
Parameters not applicable.							

Comments:

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

Sampler 

Date March 22, 2023

Supervisor _____

Date _____

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