March 10, 2016 Project No. 923-1000-002.R273

Mr. Bill Kombol
Palmer Coking Coal Company
31407 Highway 169
PO Box 10
Black Diamond, WA 98010

RE: LANDSBURG MINE SITE
INTERIM GROUNDWATER MONITORING REPORT
DECEMBER 2015

Dear Bill:

Golder Associates Inc. (Golder) completed an interim groundwater monitoring event at the Landsburg Mine Site during December 2015. Groundwater samples were collected from monitoring wells LMW-2, LMW-3, LMW-4, LMW-5, LMW-6, LMW-7, LMW-8, LMW-9, LMW-10, and LMW-11 (Figure 1). Monitoring wells LMW-2, LMW-4 and LMW-10 are completed to monitor shallow and deeper zones within the north end of the Rogers Coal Mine subsidence trench. Monitoring wells LMW-3, and LMW-5 are completed to monitor the shallow (~40 feet depth) and deeper zone (~250 feet depth), respectively, within the Rogers Coal Seam at the south end of the mine. Figure 2 presents a cross-section along the strike at the coal seam that also depicts the location of the monitoring wells. Monitoring well LMW-8 is receiving groundwater immediately before discharge from Portal 3 and the mine access incline at the south end of the Rogers Coal Mine. These wells lay along the primary pathways for detection of a chemical release from the mine, were one to occur. Groundwater samples were also collected from well LMW-9 and the deep well LMW-11, which monitor groundwater from within the Rogers Coal Mine near its south end. Wells LMW-9 and LMW-11 are receiving groundwater from near the top of the water table and near the bottom of the mine, respectively. 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.

Groundwater sampling was conducted in accordance with the *Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site* (Golder 1997)[1], and included the following activities:

- Measurement of static water levels at monitoring wells.
- Well purging to insure sample representativeness with the currently installed dedicated pumping systems.
- Measurement of field parameters including: pH, specific conductance, temperature, dissolved oxygen, redox potential (Eh), and turbidity.
- Collection of representative samples in appropriate containers; dissolved metals samples were field filtered (total metals were not). The dissolved metals samples were not analyzed.

[1] Golder Associates Inc. (Golder). 1997. Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site. Prepared for the Landsburg PLP Steering Committee, Redmond, Washington.

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- Analyses of groundwater for volatile organic compounds (VOCs; United States Environmental Protection Agency [EPA] Method 8260C), semi-volatile organic compounds (SVOCs, EPA Method 8270D), polychlorinated biphenyls (PCBs; EPA 8082A), pesticides (EPA 8081B), priority pollutant metals (EPA Method 6010C/200.8/7470A Series), and a petroleum hydrocarbon identification scan (NWTPH-HCID).

Appendix A presents the laboratory analytical reports for all analyses. Sampling activities were documented on Sample Integrity Data Sheets (SIDS). Copies of the completed SIDS are provided in Appendix B. Appendix C shows the validated data with added qualifiers. Table 1 presents groundwater depth measurements and elevations that were measured on January 27, 2016. Groundwater levels were initially collected prior to groundwater sample collection on December 11, 2015. Upon evaluation, there appeared to be several erroneous water level readings. All water levels were re-measured on January 27, 2016 as a synoptic event and were found to be similar to previous monitoring periods and indicate that groundwater is discharging out both ends of the Rogers Coal Mine.

Following sample collection, all bottles were sealed, labeled, and placed in an iced cooler until delivery to the laboratory. All groundwater samples from monitoring wells were transported under chain-of-custody procedures to Analytical Resources Incorporated (ARI), of Tukwila, Washington, for analyses. Screening levels are based on maximum contaminant levels (MCLs) or State of Washington Model Toxics Control Act (MTCA) Method A or B groundwater cleanup levels, whichever value is less. In cases where an established MCL or Method A or B Cleanup Level does not exist, a similar (surrogate) compound regulatory screening level is identified for comparison.

The analytical results indicate no significant changes in groundwater conditions from those observed during the remedial investigation (RI) and on-going interim groundwater monitoring conducted since April 1994. Table 2 presents the field parameter measurements and laboratory analytical results for each groundwater sample. Laboratory analyses did not detect any VOCs, SVOCs, PCBs, pesticides, or petroleum hydrocarbon (HCID) in any of the groundwater samples.

The laboratory data packages underwent a simple data validation. Items of note are provided in a validation memorandum in Appendix C. In general, data were found to be acceptable with minor qualification. The laboratory extracted and analyzed LMW-3-1215 twice. The first analysis contained low levels of bis(2-ethylhexyl)phthalate, due to laboratory contamination. The second analysis was non-detect for bis(2-ethylhexyl)phthalate. The second analysis was selected for reporting and the first analysis was not reported. Both analyses are provided in the laboratory data packages in Appendix A.

The only parameters detected in groundwater samples during this sampling event were metals that are naturally occurring at the concentrations detected. The method reporting limits (MRLs) and MDLs for all analytes were at or below acceptable concentrations under the MTCA.

Several groundwater samples from site wells contained iron and manganese concentrations above State of Washington secondary drinking water levels (SMCLs) of 0.3 milligrams per liter (mg/L) and 0.05 mg/L, respectively, which are not health-based standards, but are protective of aesthetic qualities of water. Iron and manganese have been detected in mine groundwater above MTCA cleanup levels in every monitoring event at the site and are naturally occurring metals that are typically associated with groundwater from coal mines (Fuste et al. 1983)[2]. The concentrations of iron and manganese detected

[2] Fuste, L.A., F.A. Packard, M.O.Fretwell, and D.P. Garland. 1983. Data Supplement To: Quality of Coal Mine Drainage in Washington, 1975-77. Open-File Report 83-205. Tacoma, Washington: US Geological Survey.

during the December 2015 sampling event are similar to concentrations detected during the RI (Golder 1996)[3] and the Interim Groundwater Sampling events previously conducted at the site.

The groundwater sample from the deep well (LMW-11) contained total arsenic at a concentration of 7.4 µg/L (0.0074 mg/L), which is less than the Washington State primary drinking water MCL (10 µg/L) and greater than the MTCA Method A groundwater cleanup level (5 µg/L). Arsenic also has been detected in groundwater from LMW-11 near or above MTCA cleanup levels during every monitoring event since LMW-11 was installed. Arsenic is also a naturally occurring metal commonly detectable in groundwater, especially in older more stagnant groundwater having low reduction-oxidation (REDOX) and dissolved oxygen levels. The MTCA groundwater cleanup level is based on typical groundwater background levels in the State of Washington. It is believed that the arsenic concentrations are naturally occurring deep within the mine where groundwater is more stagnant and its geochemistry may be different than shallow groundwater within the mine.

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

Sincerely,

GOLDER ASSOCIATES INC.

Jill S. Lamberts
Project Environmental Scientist

(for) Douglas J. Morell, PhD, LHG
Principal

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JSL/DJM/km

[3] Golder Associates Inc. (Golder). 1996. Remedial Investigation and Feasibility Study for the Landsburg Mine Site. Landsburg PLP Steering Committee.

TABLES

Table 1: Groundwater Elevation Data Collection January 27, 2016 Landsburg Mine Site

	UNITS	LMW-1	LMW-1a	LMW-2	LMW-3	LMW-4[1]	LMW-5	LMW-6	LMW-7[1]	LMW-8	LMW-9	LMW-10	LMW-11	P-2	Water Drainage	Frazier Seam Tunnel
Water Depths																
Time of data collection	ft bgs	9:00 AM	8:52 AM	10:28 AM	9:44 AM	10:32 AM	9:50 AM	8:40 AM	10:55 AM	10:02 AM	9:28 AM	10:36 AM	9:20 AM	9:56 AM	NA	NA
Measured to Top of PVC	ft bgs	131.80	128.66	5.89	10.76	7.30	12.28	21.35	209.10	3.33	98.06	0.13	155.87	5.35	NA	NA
Measured to Top of Monument	ft bgs	132.61	128.87	6.62	11.57	8.02	12.99	21.10	209.65	4.33	NC	0.32	NC	5.74	NA	NA
Surveyed Elevation																
Top of PVC	ft asl	765.16	759.51	617.73	656.75	619.26	658.27	632.33	771.51	646.97	743.99	618.87	801.87	651.37	NA	NA
Top of Monument	ft asl	765.89	NC	618.29	657.48	619.85	658.87	633.00	771.88	NC	NC	NC	802.20	NC	NA	NA
Ground Level	ft asl	762.90	756.59	615.35	654.40	617.09	655.63	629.95	768.79	645.25	741.13	615.75	799.50	648.54	551.38	542.15
Corrected Water Elevation																
Using PVC elevation	ft asl	**633.36**	**630.85**	**611.84**	**645.99**	**611.96**	**645.99**	**610.98**	**562.41**	**643.64**	**645.93**	**618.74**	**646.00**	**646.02**	NA	NA
Using Monument elevation	ft asl	633.28	NA	611.67	645.91	611.83	645.88	611.90	562.23	NA	NA	NA	NA	NA	NA	NA

Notes:

[1] Data corrected to accommodate well inclination of 20° from vertical

Some of the water levels measured during the December 2015 sampling event were determined to be erroneous; therefore, all water levels were remeasured on January 27, 2016

NA = Not applicable

NC = Data not collected

ft bgs = feet below ground surface

ft asl = feet above sea level

Table 2: December 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-7 Duplicate	LMW-8	LMW-9	LMW-10	LMW-11	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
		12/17/2015	12/16/2015	12/17/2015	12/16/2015	12/15/2015	12/15/2015	12/15/2015	12/16/2015	12/16/2015	12/17/2018	12/15/2015	12/16/2015	12/15/2015	12/16/2015	12/17/2015
Field Parameter																
pH	stnd	6.99	7.91	7.00	7.01	7.11	7.35	NA	7.01	7.12	8.93	7.54	NA	NA	NA	NA
Conductivity	uS/cm	887	290.2	898	703	260.0	573	NA	410	636	360	557	NA	NA	NA	NA
Dissolved Oxygen	mg/L	0.00	0.00	0.00	0.00	0.00	0.04	NA	0.00	0.00	0.00	0.43	NA	NA	NA	NA
Temperature	^{o}C	10.7	11.2	10.7	11.1	9.8	12.7	NA	10.6	11.5	9.9	10.4	NA	NA	NA	NA
E_h	Rel mV	126.8	159.2	76.3	92.0	-84.6	-90.4	NA	138.4	148.4	14.9	280.4	NA	NA	NA	NA
Turbidity	NTU	0.28	1.31	0.32	1.44	0.74	0.71	NA	5.09	1.25	0.55	1.07	NA	NA	NA	NA
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	NA	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	NA	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	**0.0074**	0.003 U	NA	NA	NA
Barium	mg/L	0.500 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.520**	**0.513**	0.5 U	0.500 U	0.5 U	0.5 U	0.5 U	NA	NA	NA
Beryllium	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	NA	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	NA	NA	NA
Calcium	mg/L	**114**	**38.9**	**114**	**90.9**	**27.7**	**56.9**	**55.8**	**47.7**	**82.4**	**6.95**	**58.8**	0.5 U	NA	NA	NA
Chromium	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	NA	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	NA	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	NA	NA	NA
Iron	mg/L	**0.460**	0.2 U	**1.01**	**0.28**	**2.42**	**1.16**	**1.13**	**8.26**	**1.53**	0.2 U	**1.62**	0.2 U	NA	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	NA	NA	NA
Magnesium	mg/L	**70.6**	**16.5**	**70.2**	**52.0**	**14.0**	**26.6**	**25.9**	**26.5**	**46.2**	**3.12**	**28.3**	1 U	NA	NA	NA
Manganese	mg/L	**0.232**	**0.079**	**0.19**	**0.236**	**0.036**	**0.141**	**0.139**	**0.407**	**0.171**	0.02 U	**0.144**	0.02 U	NA	NA	NA
Mercury	mg/L	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	0.00002 U	NA	NA	NA
Nickel	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	NA	NA	NA
Potassium	mg/L	**3.65**	**1.79**	**3.82**	**2.68**	**0.72**	**3.18**	**3.11**	**1.75**	**2.56**	**1.32**	**2.13**	0.5 U	NA	NA	NA
Selenium	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	NA	NA	NA
Silver	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	NA	NA	NA
Sodium	mg/L	**21**	**10.9**	**24.5**	**16.5**	**7.6**	**43.9**	**43.0**	**10.0**	**15.9**	**88.4**	**30**	0.500 U	NA	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	NA	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	NA	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	NA	NA	NA

Table 2: December 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-7 Duplicate	LMW-8	LMW-9	LMW-10	LMW-11	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
		12/17/2015	12/16/2015	12/17/2015	12/16/2015	12/15/2015	12/15/2015	12/15/2015	12/16/2015	12/16/2015	12/17/2018	12/15/2015	12/16/2015	12/15/2015	12/16/2015	12/17/2015
Volatile Organic Compounds (VOCs)																
Acetone	µg/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	**2.2 J**	**4.6 J**
Acrolein	µg/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	5 U	2.5 U	2.5 U	2.5 U	2.5 U
Acrylonitrile	µg/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
Benzene	µg/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
Bromobenzene	µg/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
Bromochloromethane	µg/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
Bromodichloromethane	µg/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
Bromoform	µg/L	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Bromomethane	µg/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
2-Butanone	µg/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
n-Butylbenzene	µg/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
sec-Butylbenzene	µg/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
tert-Butylbenzene	µg/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
Carbon disulfide	µg/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
Carbon tetrachloride	µg/L	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
Chlorobenzene	µg/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
Chloroethane	µg/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
2-Chloroethylvinylether	µg/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	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	µg/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
Chloromethane	µg/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	**0.1 J**	**0.14 J**
2-Chlorotoluene	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
4-Chlorotoluene	µg/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
Chlorodibromomethane	µg/L	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
1,2-Dibromo-3-Chloropropane	µg/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
1,2-Dibromoethane	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibromomethane	µg/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
1,2-Dichlorobenzene	µg/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
1,3-Dichlorobenzene	µg/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
1,4-Dichlorobenzene	µg/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
trans-1,4-Dichloro-2-butene	µg/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-Dichloroethane	µg/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
1,2-Dichloroethane	µg/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
1,1-Dichloroethene	µg/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
cis-1,2-Dichloroethene	µg/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
trans-1,2-Dichloroethene	µg/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
1,2-Dichloropropane	µg/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
1,3-Dichloropropane	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
2,2-Dichloropropane	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-Dichloropropene	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
cis-1,3-Dichloropropene	µg/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
trans-1,3-Dichloropropene	µg/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
Ethylbenzene	µg/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
Hexachlorobutadiene	µg/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	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	µg/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
Iodomethane	µg/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	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	µg/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
4-Isopropyltoluene	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
Methylene Chloride	µg/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
4-Methyl-2-pentanone	µg/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	5 U	2.5 U	2.5 U	2.5 U	2.5 U
Naphthalene	µg/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
N-Propylbenzene	µg/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
Styrene	µg/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	**0.06 J**	0.2 U
1,2,3-Trichlorobenzene	µg/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	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U

Table 2: December 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-7 Duplicate	LMW-8	LMW-9	LMW-10	LMW-11	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
		12/17/2015	12/16/2015	12/17/2015	12/16/2015	12/15/2015	12/15/2015	12/15/2015	12/16/2015	12/16/2015	12/17/2018	12/15/2015	12/16/2015	12/15/2015	12/16/2015	12/17/2015
1,2,4-Trichlorobenzene	µg/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
1,3,5-Trichlorobenzene	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-Tetrachloroethane	µg/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
1,1,2,2-Tetrachloroethane	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
Tetrachloroethene	µg/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
Toluene	µg/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	**0.05 J**	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	µg/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
1,1,2-Trichloroethane	µg/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
Trichloroethene	µg/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
Trichlorofluoromethane	µg/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
Total Benzofluoranthenes	µg/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	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	µg/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
1,2,3-Trichloropropane	µg/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	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trimethylbenzene	µg/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
1,3,5-Trimethylbenzene	µg/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
Vinyl acetate	µg/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
Vinyl chloride	µg/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	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U
m-Xylene & p-Xylene	µg/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	**0.1 J**
o-Xylene	µg/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
Xylenes, Total	µg/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	0.1 J
Semi-Volatile Organic Compounds (SVOCs)																
Acenaphthene	µg/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	NA	NA	NA
Acenaphthylene	µg/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	NA	NA	NA
Anthracene	µg/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	NA	NA	NA
Benzo(a)anthracene	µg/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	NA	NA	NA
Benzo(a)pyrene	µg/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	NA	NA	NA
Benzo(b)fluoranthene	µg/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	NA	NA	NA
Benzo(ghi)perylene	µg/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	NA	NA	NA
Benzo(k)fluoranthene	µg/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	NA	NA	NA
Benzoic Acid	µg/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	NA	NA	NA
Benzyl Alcohol	µg/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	NA	NA	NA
Bis(2-chloroethoxy)methane	µg/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	NA	NA	NA
Bis(2-chloroethyl)ether	µg/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	NA	NA	NA
Bis(2-chloroisopropyl)ether	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	µg/L	3 U	3 [1] U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	NA	NA
4-Bromophenyl phenyl ether	µg/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	NA	NA	NA
Butyl benzyl phthalate	µg/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	NA	NA	NA
Carbazole	µg/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	NA	NA	NA
4-Chloroaniline	µg/L	5 UJ	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	NA	NA	NA
4-Chloro-3-methylphenol	µg/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	NA	NA	NA
2-Chloronaphthalene	µg/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	NA	NA	NA
2-Chlorophenol	µg/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	NA	NA	NA
4-Chlorophenyl phenyl ether	µg/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	NA	NA	NA
3 & 4-Methylphenol (m,p-Cresols)	µg/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	NA	NA	NA
2-Methylphenol (o-Cresol)	µg/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	NA	NA	NA
Chrysene	µg/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	NA	NA	NA
Di-n-butyl phthalate	µg/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	NA	NA	NA
Dibenz(a,h)anthracene	µg/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	NA	NA	NA
Dibenzofuran	µg/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	NA	NA	NA
1,2-Dichlorobenzene	µg/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	NA	NA	NA
1,3-Dichlorobenzene	µg/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	NA	NA	NA
1,4-Dichlorobenzene	µg/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	NA	NA	NA
3,3'-Dichlorobenzidine	µg/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	NA	NA	NA
2,4-Dichlorophenol	µg/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	NA	NA	NA

Table 2: December 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-7 Duplicate	LMW-8	LMW-9	LMW-10	LMW-11	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
		12/17/2015	12/16/2015	12/17/2015	12/16/2015	12/15/2015	12/15/2015	12/15/2015	12/16/2015	12/16/2015	12/17/2018	12/15/2015	12/16/2015	12/15/2015	12/16/2015	12/17/2015
Diethyl phthalate	µg/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	NA	NA	NA
2,4-Dimethylphenol	µg/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	NA	NA	NA
Dimethyl phthalate	µg/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	NA	NA	NA
4,6-Dinitro-2-methylphenol	µg/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	NA	NA	NA
2,4-Dinitrophenol	µg/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	NA	NA	NA
2,4-Dinitrotoluene	µg/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	NA	NA	NA
2,6-Dinitrotoluene	µg/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	NA	NA	NA
N-Nitrosodiphenylamine	µg/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	NA	NA	NA
Fluoranthene	µg/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	NA	NA	NA
Fluorene	µg/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	NA	NA	NA
Hexachlorobenzene	µg/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	NA	NA	NA
Hexachlorobutadiene	µg/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	NA	NA	NA
Hexachlorocyclopentadiene	µg/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	NA	NA	NA
Hexachloroethane	µg/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	NA	NA	NA
Indeno(1,2,3-cd)pyrene	µg/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	NA	NA	NA
Isophorone	µg/L	1 U	1 U	1 U	1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 UJ	1 U	NA	NA	NA
1-Methylnaphthalene	µg/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	NA	NA	NA
2-Methylnaphthalene	µg/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	NA	NA	NA
4-Methylphenol	µg/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	NA	NA	NA
Naphthalene	µg/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	NA	NA	NA
2-Nitroaniline	µg/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	NA	NA	NA
3-Nitroaniline	µg/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	NA	NA	NA
4-Nitroaniline	µg/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	NA	NA	NA
Nitrobenzene	µg/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	NA	NA	NA
2-Nitrophenol	µg/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	NA	NA	NA
4-Nitrophenol	µg/L	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	NA	NA	NA
N-Nitrosodi-n-propylamine	µg/L	1 UJ	1 U	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
2,2'-Oxybis(1-Chloropropane)	µg/L	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	NA	NA	NA
Di-n-octyl phthalate	µg/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	NA	NA	NA
Pentachlorophenol	µg/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	NA	NA	NA
Phenanthrene	µg/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	NA	NA	NA
Phenol	µg/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	NA	NA	NA
Pyrene	µg/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	NA	NA	NA
1,2,4-Trichlorobenzene	µg/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	NA	NA	NA
2,4,5-Trichlorophenol	µg/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	NA	NA	NA
2,4,6-Trichlorophenol	µg/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	NA	NA	NA
Polychlorinated Biphenyls (PCBs)																
Aroclor 1016	µg/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	NA	NA	NA
Aroclor 1221	µg/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	NA	NA	NA
Aroclor 1232	µg/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	NA	NA	NA
Aroclor 1242	µg/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	NA	NA	NA
Aroclor 1248	µg/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	NA	NA	NA
Aroclor 1254	µg/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	NA	NA	NA
Aroclor 1260	µg/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	NA	NA	NA
Pesticides																
Aldrin (2C)	µg/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	NA	NA	NA
alpha-BHC (2C)	µg/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	NA	NA	NA
beta-BHC (2C)	µg/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	NA	NA	NA
delta-BHC (2C)	µg/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	NA	NA	NA
gamma-BHC (2C)	µg/L	0.025 U	0.025 U	0.099 U	0.31 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	NA
cis-Chlordane	µg/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	NA	NA	NA
trans-Chlordane	µg/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	NA	NA	NA
4,4'-DDD (2C)	µg/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	NA	NA	NA
4,4'-DDE (2C)	µg/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	NA	NA	NA

Table 2: December 2015 Groundwater Analytical Results Landsburg Mine Site

ANALYTE	UNITS	LMW-2	LMW-3	LMW-4	LMW-5	LMW-6	LMW-7	LMW-7 Duplicate	LMW-8	LMW-9	LMW-10	LMW-11	Equipment Blank	Trip Blank	Trip Blank	Trip Blank
		12/17/2015	12/16/2015	12/17/2015	12/16/2015	12/15/2015	12/15/2015	12/15/2015	12/16/2015	12/16/2015	12/17/2018	12/15/2015	12/16/2015	12/15/2015	12/16/2015	12/17/2015
4,4'-DDT (2C)	µg/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	NA	NA	NA
Dieldrin (2C)	µg/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	NA	NA	NA
Endosulfan I (2C)	µg/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	NA	NA	NA
Endosulfan II (2C)	µg/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	NA	NA	NA
Endosulfan sulfate (2C)	µg/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	NA	NA	NA
Endrin	µg/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	NA	NA	NA
Endrin aldehyde (2C)	µg/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	NA	NA	NA
Endrin ketone (2C)	µg/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	NA	NA	NA
Heptachlor (2C)	µg/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	NA	NA	NA
Heptachlor epoxide (2C)	µg/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	NA	NA	NA
Methoxychlor (2C)	µg/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	NA	NA	NA
Toxaphene	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	NA	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 UJ	0.5 U	0.5 U	NA	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 UJ	0.25 U	0.25 U	NA	NA	NA
Lube Oil	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 UJ	0.5 U	0.5 U	NA	NA	NA

Notes:
NA = Not Analyzed
U - The analyte was not detected above the level of the reporting limit.
UJ - The analyte was not detected above the reporting limit and is estimated.
µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
Rel mV = relative millivolts
NTU = nephelometric turbidity unit
µg/L = micrograms per liter
[1] Initial analysis had detection of 11 µg/L due to lab contamination. Sample was re-extracted and then reanalyzed. Reanalysis was non-detect.

FIGURES

E 1713000
N 140000

E 1716000
N 140000

PIPELINE

CEDAR RIVER

ROAD

DISCHARGE PIPE

SE SUMMIT LANDSBURG RD

VALVE (TYP)

TREATMENT FACILITIES

LMW-4

LMW-2

LMW-10

Portal 2

LMW-6

LMW-1

Fenced Area

LMW-7

E 1713000
N 137000

LMW-11

LMW-9

LMW-5

LMW-3

P-2

LMW-8

Portal 3

Power Lines

KENT–KANGLEY RD.

0 400 800
FEET

Legend

P-2	Landsburg Piezometer
LMW-5	Landsburg Monitoring Well
Portal 3	Portal Seepage Locations
	Protective Fence
	Trail
	Unpaved Road
	Building

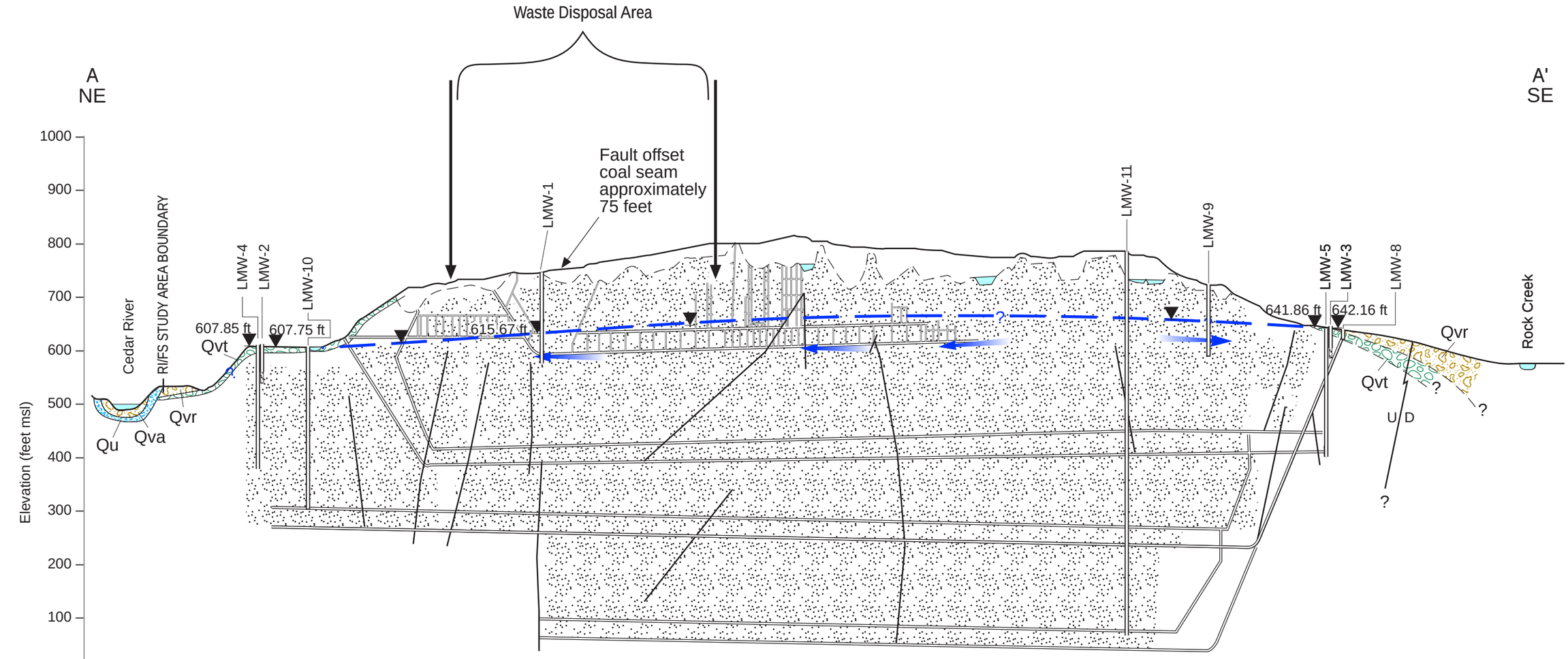
NOTES:

1) Interim groundwater monitoring locations are underlined.

FIGURE 1

GROUNDWATER MONITORING LOCATIONS

PALMER/LANDSBURG MINE/WA



EXPLANATION

- Potentiometric surface
- Outline of trench bottom
- Water Level (ft. amsl) 2/23/94
- Qvt Till, compact mixture of gravel occasional boulders in clayey silty sand matrix
- Sandstone
- Surface water feature
- Anticipated collapsed zone within mine
- Qu Drift, till, fluvial sand and gravel, lacustrine sand, silt, clay and peat
- Qvr Recessional outwash, well sorted sand and pebble-cobble
- Qva Advanced outwash pebble-cobble gravel may include very fine sand
- Monitoring Interval
- Groundwater Flow Direction

0 500
SCALE IN FEET

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

NOTE: Vertical to horizontal scale ratio is 2.5:1
Wells are project normal into the strike of the Cross-Section A-A'

Assuming groundwater discharge at the north and south end of mine.

FIGURE 2
CROSS-SECTION ALONG STRIKE AT COAL SEAM
PALMER/LANDSBURG MINE/WA

Golder Associates

APPENDIX A
LABORATORY ANALYTICAL REPORTS

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 7, 2016

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

Client Project Name: Landsburg Mine
Client Project Number: 923-1000-002.R273
ARI ID: ASV5 and ASV9

Dear Mr. Zimmerman:

Please find enclosed Chain-of-Custody (COC) record, sample receipt documentation, and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted four water samples trip blanks in good condition on December 15, 2015. There were no discrepancies between the COC and the sample containers' labels. Per client request, the metals reporting limits were raised to meet client required limits.

The samples were analyzed for VOCs, PCBs, HCID, Pesticides, SVOCs, Total Metals, as requested on the COC. Quality control analyses are included for your review.

The VOCs CCALs are out of control low for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The VOCs method blanks contained contamination at "J" qualified values. All associated samples and QC that contain analyte have been flagged with a "B" qualifier.

The VOCs LCS and/or LCSD are out of control low for several analytes.

The SVOCs LCS is out of control low for several analytes with several RPDs outside of control limits. The LCSD is in control.

The SVOCs CCALs are out of control high for all associated FORM III "Q" flagged analytes with the exception of 2,2--oxybis(1-Chloropropane), isophorone, 4-Nitrophenol and N-nitroso-di-n-propylamine which are out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The matrix spike was not recovered for chromium due to elevated RLs.

No other analytical complications were noted.

An electronic copy of this report and all supporting raw data will remain on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

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

ARI Assigned Number: ASVS	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G. Zimmerman J. Lamberts	
Client Project Name: Landsburg	
Client Project #: 923100002	Samplers: Lamberts Miller

Page: 1 of 1	
Date: 12/15/15	Ice Present? Yes
No. of Coolers: 5	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	VOC Client List	PCB(LL) Pesticides	SVOC 8270 Client List	TPH HCID	TAML -Total Metals	TAML ★ -Diss Metals			Notes/Comments
Trip Blank-121515	12/15/15	—	W	6	X								★ Field Filtered 0.45µm Filter (Please analyze under Existing MSA)
LMW-11-1215	↓	1000	W	17	X	X	X	X	X	Hold			
LMW-6-1215	↓	1205	W	17	X	X	X	X	X	↓			
LMW-7-1215	↓	1350	W	17	X	X	X	X	X	↓			
LMW-7-1215-D	↓	1355	W	17	X	X	X	X	X	↓			

Comments/Special Instructions:
-Ecology EIM EDD
Client Specific RLs + Analyte List
Pls cc jlamberts + gzimmerman@golder.com

	Relinquished by	Received by	Relinquished by	Received by
(Signature)	[signature]	[signature]		
Printed Name	J. Lamberts	Chris Atwell		
Company	Golder	ARI		
Date & Time	12/15/15 1525	12/15/15 1525		

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

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

ASV5 : 00002

PRESERVATION VERIFICATION 12/16/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ASV5**

Inquiry Number: NONE
Analysis Requested: 12/16/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-119
Validatable Package: LV4
Deliverables:

PC: Kelly
VTSR: 12/15/15

Project #: 9231000002
Project: Landsburg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24545 **ASV5B**	LMW-11-1215						TOT Pass															
15-24546 **ASV5C**	LMW-6-1215						TOT Pass															
15-24547 **ASV5D**	LMW-7-1215						TOT Pass															
15-24548 **ASV5E**	LMW-7-1215-D						TOT Pass															

ASV5 95555

Checked By CA Date 12/16/15

PRESERVATION VERIFICATION 12/16/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ASV9**

Inquiry Number: NONE
Analysis Requested: 12/16/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 12/15/15

Project #: 9231000002
Project: Landsburg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24560 **ASV9A**	LMW-11-1215						TOT P															
15-24561 **ASV9B**	LMW-6-1215						TOT P															
15-24562 **ASV9B**	LMW-7-1215						TOT P															
15-24563 **ASV9C**	LMW-7-1215-D						TOT P															

ASV5 09981

Checked By CA Date 12/16/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder Project Name: Landsburg

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

Assigned ARI Job No: ASV5 / ASV9 Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to 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) 1.1 2.1 0.3 1.2 0.8 ___

Time: ___

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DC0256

Cooler Accepted by: CA Date: 12/15/15 Time: 1525

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ...	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
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		

Was Sample Split by ARI : NA YES Date/Time: ___ Equipment: ___ Split by: ___

Samples Logged by: CA Date: 12-16-15 Time: 0949

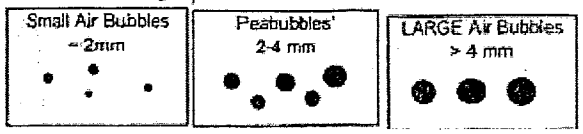
*** Notify Project Manager of discrepancies or concerns ***

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

Additional Notes, Discrepancies, & Resolutions:

2 of 6 VOAs for trip blanks have sm bubbles.

By: CA Date: 12-16-15



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ASV5
Client: Golder Associates
Project Event: 9231000002
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	Trip Blank-121515	ASV5A	15-24544	Water	12/15/15	12/15/15 15:25
2.	LMW-11-1215	ASV5B	15-24545	Water	12/15/15 10:00	12/15/15 15:25
3.	LMW-6-1215	ASV5C	15-24546	Water	12/15/15 12:05	12/15/15 15:25
4.	LMW-7-1215	ASV5D	15-24547	Water	12/15/15 13:50	12/15/15 15:25
5.	LMW-7-1215-D	ASV5E	15-24548	Water	12/15/15 13:55	12/15/15 15:25

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ASV9
Client: Golder Associates
Project Event: 9231000002
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LMW-11-1215	ASV9A	15-24560	Water	12/15/15 10:00	12/15/15 15:25
2.	LMW-6-1215	ASV9B	15-24561	Water	12/15/15 12:05	12/15/15 15:25
3.	LMW-7-1215	ASV9B	15-24562	Water	12/15/15 13:50	12/15/15 15:25
4.	LMW-7-1215-D	ASV9C	15-24563	Water	12/15/15 13:55	12/15/15 15:25

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
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).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

Analytical Method Information

Printed: 01/14/2016 9:47 am

8260C VOA in Water (EPA 8260C)

Preservation: pH<2; HCL, Cool <6°C

Container: VOA Vial, Clear, 40 mL, HCL **Amount Required:** 120 mL **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chloromethane	0.0948	0.500 ug/L		30	59-134	30	59-134	30
Vinyl Chloride	0.0572	0.200 ug/L		30	70-130	30	70-130	30
Bromomethane	0.252	1.00 ug/L		30	52-142	30	52-142	30
Chloroethane	0.0861	0.200 ug/L		30	47-172	30	47-172	30
Trichlorofluoromethane	0.0375	0.200 ug/L		30	70-138	30	70-138	30
Acrolein	2.48	5.00 ug/L		30	45-144	30	45-144	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0429	0.200 ug/L		30	73-125	30	73-125	30
Acetone	2.06	5.00 ug/L		30	46-157	30	46-157	30
1,1-Dichloroethene	0.0540	0.200 ug/L		30	76-123	30	76-123	30
Bromoethane	0.0412	0.200 ug/L		30	72-125	30	72-125	30
Iodomethane	0.227	1.00 ug/L		30	46-143	30	46-143	30
Methylene Chloride	0.485	1.00 ug/L		30	68-129	30	68-129	30
Acrylonitrile	0.604	1.00 ug/L		30	65-124	30	65-124	30
Carbon Disulfide	0.0370	0.200 ug/L		30	69-129	30	69-129	30
trans-1,2-Dichloroethene	0.0485	0.200 ug/L		30	72-124	30	72-124	30
Vinyl Acetate	0.0688	0.200 ug/L		30	62-133	30	62-133	30
1,1-Dichloroethane	0.0533	0.200 ug/L		30	77-122	30	77-122	30
2-Butanone	0.814	5.00 ug/L		30	67-134	30	67-134	30
2,2-Dichloropropane	0.0518	0.200 ug/L		30	71-134	30	71-134	30
cis-1,2-Dichloroethene	0.0427	0.200 ug/L		30	79-120	30	79-120	30
Chloroform	0.0273	0.200 ug/L		30	77-123	30	77-123	30
Bromochloromethane	0.0607	0.200 ug/L		30	77-120	30	77-120	30
1,1,1-Trichloroethane	0.0408	0.200 ug/L		30	78-124	30	78-124	30
1,1-Dichloropropene	0.0340	0.200 ug/L		30	78-120	30	78-120	30
Carbon tetrachloride	0.0439	0.200 ug/L		30	69-129	30	69-139	30
1,2-Dichloroethane	0.0717	0.200 ug/L		30	71-125	30	71-125	30
Benzene	0.0266	0.200 ug/L		30	80-120	30	80-120	30
Trichloroethene	0.0489	0.200 ug/L		30	80-120	30	80-120	30
1,2-Dichloropropane	0.0352	0.200 ug/L		30	79-120	30	79-120	30
Bromodichloromethane	0.0506	0.200 ug/L		30	78-120	30	78-120	30
Dibromomethane	0.145	0.200 ug/L		30	77-120	30	77-120	30
2-Chloroethyl vinyl ether	0.250	1.00 ug/L		30	67-125	30	67-125	30
4-Methyl-2-Pentanone	0.974	5.00 ug/L		30	72-132	30	72-132	30
cis-1,3-Dichloropropene	0.0610	0.200 ug/L		30	79-124	30	79-124	30
Toluene	0.0399	0.200 ug/L		30	80-120	30	80-120	30
trans-1,3-Dichloropropene	0.0815	0.200 ug/L		30	77-126	30	77-126	30
2-Hexanone	0.902	5.00 ug/L		30	70-135	30	70-135	30
1,1,2-Trichloroethane	0.129	0.200 ug/L		30	77-120	30	77-120	30
1,3-Dichloropropane	0.0622	0.200 ug/L		30	80-120	30	80-120	30
Tetrachloroethene	0.0474	0.200 ug/L		30	80-120	30	80-120	30
Dibromochloromethane	0.0481	0.200 ug/L		30	74-121	30	74-121	30
1,2-Dibromoethane	0.0745	0.200 ug/L		30	79-120	30	79-120	30
Chlorobenzene	0.0230	0.200 ug/L		30	80-120	30	80-120	30
Ethylbenzene	0.0371	0.200 ug/L		30	78-122	30	78-122	30
1,1,1,2-Tetrachloroethane	0.0396	0.200 ug/L		30	76-123	30	76-123	30
m,p-Xylene	0.0522	0.400 ug/L		30	78-126	30	78-126	30
o-Xylene	0.0349	0.200 ug/L		30	76-127	30	76-127	30
Xylenes, total	0.0871	0.600 ug/L		30	76-127	30	76-127	30
Styrene	0.0454	0.200 ug/L		30	79-129	30	79-129	30
Bromoform	0.0618	0.200 ug/L		30	57-131	30	57-131	30
1,1,2,2-Tetrachloroethane	0.0598	0.200 ug/L		30	73-120	30	73-120	30
1,2,3-Trichloropropane	0.131	0.500 ug/L		30	69-127	30	69-127	30
trans-1,4-Dichloro 2-Butene	0.324	1.00 ug/L		30	49-144	30	49-144	30
n-Propylbenzene	0.0235	0.200 ug/L		30	73-130	30	73-130	30

Analytical Method Information

(Continued)

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8260C VOA in Water (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Bromobenzene	0.0605	0.200 ug/L		30	79-120	30	79-120	30
Isopropyl Benzene	0.0212	0.200 ug/L		30	78-129	30	79-129	30
2-Chlorotoluene	0.0236	0.200 ug/L		30	80-121	30	80-121	30
4-Chlorotoluene	0.0159	0.200 ug/L		30	78-122	30	78-122	30
t-Butylbenzene	0.0256	0.200 ug/L		30	73-129	30	73-129	30
1,3,5-Trimethylbenzene	0.0150	0.200 ug/L		30	77-128	30	77-128	30
1,2,4-Trimethylbenzene	0.0243	0.200 ug/L		30	76-129	30	76-129	30
s-Butylbenzene	0.0237	0.200 ug/L		30	75-128	30	75-128	30
4-Isopropyl Toluene	0.0263	0.200 ug/L		30	74-131	30	74-121	30
1,3-Dichlorobenzene	0.0362	0.200 ug/L		30	79-120	30	79-120	30
1,4-Dichlorobenzene	0.0397	0.200 ug/L		30	77-120	30	77-120	30
n-Butylbenzene	0.0248	0.200 ug/L		30	73-130	30	73-130	30
1,2-Dichlorobenzene	0.0365	0.200 ug/L		30	78-120	30	78-120	30
1,2-Dibromo-3-chloropropane	0.366	0.500 ug/L		30	60-124	30	60-124	30
1,2,4-Trichlorobenzene	0.107	0.500 ug/L		30	54-131	30	54-131	30
Hexachloro-1,3-Butadiene	0.0734	0.500 ug/L		30	55-132	30	55-132	30
Naphthalene	0.118	0.500 ug/L		30	50-135	30	50-135	30
1,2,3-Trichlorobenzene	0.110	0.500 ug/L		30	45-137	30	45-137	30
Dichlorodifluoromethane	0.0521	0.200 ug/L		30	41-159	30	41-159	30
Methyl tert-butyl Ether	0.0729	0.500 ug/L		30	74-127	30	74-127	30
n-Hexane	0.100	0.200 ug/L		30	70-130	30	70-130	30
2-Pentanone	5.00	5.00 ug/L		30	64-184	30	64-184	30
Surr: Dibromofluoromethane			80-120					
Surr: 1,2-Dichloroethane-d4			80-129					
Surr: Toluene-d8			80-120					
Surr: 4-Bromofluorobenzene			80-120					
Surr: 1,2-Dichlorobenzene-d4			80-120					
Pentafluorobenzene								
Chlorobenzene-d5								
1,4-Difluorobenzene								
1,4-Dichlorobenzene-d4								

Analytical Method Information

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8270D SVOC (LiqLiq) in Water (EPA 8270D)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Phenol	0.271	1.00 ug/L		30	48-120	30	48-120	30
bis(2-chloroethyl) ether	0.248	1.00 ug/L		30	50-120	30	50-120	30
2-Chlorophenol	0.220	1.00 ug/L		30	48-120	30	48-120	30
1,3-Dichlorobenzene	0.266	1.00 ug/L		30	24-120	30	24-120	30
1,4-Dichlorobenzene	0.267	1.00 ug/L		30	24-120	30	24-120	30
1,2-Dichlorobenzene	0.250	1.00 ug/L		30	28-120	30	28-120	30
Benzyl alcohol	0.552	2.00 ug/L		30	26-120	30	26-120	30
2,2'-Oxybis(1-chloropropane)	0.241	1.00 ug/L		30	47-120	30	47-120	30
2-Methylphenol	0.211	1.00 ug/L		30	44-120	30	44-120	30
Hexachloroethane	0.300	2.00 ug/L		30	18-120	30	18-120	30
N-Nitroso-di-n-Propylamine	0.269	1.00 ug/L		30	50-120	30	50-120	30
4-Methylphenol	0.468	2.00 ug/L		30	48-120	30	48-120	30
Nitrobenzene	0.253	1.00 ug/L		30	49-120	30	49-120	30
Isophorone	0.423	1.00 ug/L		30	57-120	30	57-120	30
2-Nitrophenol	0.263	3.00 ug/L		30	47-120	30	47-120	30
2,4-Dimethylphenol	1.12	3.00 ug/L		30	37-120	30	37-120	30
Bis(2-Chloroethoxy)methane	0.237	1.00 ug/L		30	48-120	30	48-120	30
2,4-Dichlorophenol	1.11	3.00 ug/L		30	54-120	30	54-120	30
1,2,4-Trichlorobenzene	0.254	1.00 ug/L		30	28-120	30	28-120	30
Naphthalene	0.246	1.00 ug/L		30	34-120	30	34-120	30
Benzoic acid	3.92	20.0 ug/L		30	37-120	30	37-120	30
4-Chloroaniline	1.73	5.00 ug/L		30	10-132	30	10-132	30
2,6-Dinitrotoluene	1.14	3.00 ug/L		30	52-120	30	52-120	30
Hexachlorobutadiene	0.335	3.00 ug/L		30	18-120	30	18-120	30
4-Chloro-3-Methylphenol	1.12	3.00 ug/L		30	59-120	30	59-120	30
Hexachlorocyclopentadiene	1.08	5.00 ug/L		30	16-120	30	16-120	30
2,4,6-Trichlorophenol	1.04	3.00 ug/L		30	53-120	30	53-120	30
2,4,5-Trichlorophenol	1.10	5.00 ug/L		30	58-120	30	58-120	30
2-Chloronaphthalene	0.248	1.00 ug/L		30	42-120	30	42-120	30
2-Nitroaniline	1.46	3.00 ug/L		30	31-120	30	31-120	30
Acenaphthylene	0.268	1.00 ug/L		30	46-120	30	46-120	30
Dimethylphthalate	0.259	1.00 ug/L		30	61-120	30	61-120	30
Acenaphthene	0.254	1.00 ug/L		30	43-120	30	43-120	30
3-Nitroaniline	1.53	3.00 ug/L		30	36-120	30	36-120	30
2-Methylnaphthalene	0.295	1.00 ug/L		30	27-120	30	27-120	30
2,4-Dinitrophenol	3.35	20.0 ug/L		30	40-120	30	40-120	30
Dibenzofuran	0.309	1.00 ug/L		30	36-120	30	36-120	30
4-Nitrophenol	1.75	10.0 ug/L		30	44-129	30	44-129	30
2,4-Dinitrotoluene	1.12	3.00 ug/L		30	51-120	30	51-120	30
Fluorene	0.291	1.00 ug/L		30	42-120	30	42-120	30
4-Chlorophenylphenyl ether	0.267	1.00 ug/L		30	54-120	30	54-120	30
Diethyl phthalate	0.273	1.00 ug/L		30	60-120	30	60-120	30
4-Nitroaniline	2.02	3.00 ug/L		30	25-132	30	25-132	30
4,6-Dinitro-2-methylphenol	3.61	10.0 ug/L		30	56-120	30	56-120	30
N-Nitrosodiphenylamine	0.299	1.00 ug/L		30	48-120	30	48-120	30
4-Bromophenyl phenyl ether	0.238	1.00 ug/L		30	56-120	30	56-120	30
Hexachlorobenzene	0.280	1.00 ug/L		30	54-120	30	54-120	30
Pentachlorophenol	1.89	10.0 ug/L		30	40-131	30	40-131	30
Phenanthrene	0.318	1.00 ug/L		30	53-120	30	53-120	30
Anthracene	0.265	1.00 ug/L		30	47-120	30	47-120	30
Carbazole	0.310	1.00 ug/L		30	57-120	30	57-120	30
Di-n-butylphthalate	0.291	1.00 ug/L		30	65-120	30	65-120	30
Fluoranthene	0.297	1.00 ug/L		30	53-120	30	53-120	30
Pyrene	0.284	1.00 ug/L		30	47-120	30	47-120	30

Analytical Method Information
(Continued)

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8270D SVOC (LiqLiq) in Water (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Butylbenzylphthalate	0.299	1.00 ug/L		30	54-120	30	54-120	30
Benzo(a)anthracene	0.287	1.00 ug/L		30	51-120	30	51-120	30
3,3'-Dichlorobenzidine	1.77	5.00 ug/L		30	44-120	30	44-120	30
Chrysene	0.321	1.00 ug/L		30	48-120	30	48-120	30
bis(2-Ethylhexyl)phthalate	2.14	3.00 ug/L		30	58-120	30	58-120	30
Di-n-Octylphthalate	0.268	1.00 ug/L		30	62-120	30	62-120	30
Benzo(b)fluoranthene	0.317	1.00 ug/L		30	49-120	30	49-120	30
Benzo(k)fluoranthene	0.335	1.00 ug/L		30	47-120	30	47-120	30
Benzo(a)pyrene	0.297	1.00 ug/L		30	45-120	30	45-120	30
Indeno(1,2,3-cd)pyrene	0.359	1.00 ug/L		30	41-120	30	41-120	30
Dibenzo(a,h)anthracene	0.394	1.00 ug/L		30	35-120	30	35-120	30
Benzo(g,h,i)perylene	0.391	1.00 ug/L		30	35-120	30	35-120	30
N-Nitrosodimethylamine	1.33	3.00 ug/L		30	41-120	30	41-120	30
Aniline	0.973	1.00 ug/L		30	21-120	30	21-120	30
1-Methylnaphthalene	0.258	1.00 ug/L		30	55-120	30	55-120	30
Azobenzene (1,2-DP-Hydrazine)	0.228	1.00 ug/L		30	55-120	30	55-120	30
Retene	4.01	20.0 ug/L		30		30		30
Pyridine	86.6	100 ug/L		30	10-147	30	10-147	30
Benzofluoranthenes, Total	0.801	2.00 ug/L		30	30-160	30	30-160	30
2,3,4,6-Tetrachlorophenol	0.244	1.00 ug/L		30	30-160	30	30-160	30
Benzidine		10.0 ug/L		30	57-120	30	57-120	30
Tetrachloroguaiacol				30		30		30
1,2,4,5-Tetrachlorobenzene	0.381	1.00 ug/L		30		30		30
1,4-Dioxane	0.506	2.00 ug/L		40	40-120	40		40
3,4,5-Trichloroguaiacol	0.470	1.00 ug/L		30		30		30
3,4,6-Trichloroguaiacol		1.00 ug/L		30		30		30
4,5,6-Trichloroguaiacol	0.476	1.00 ug/L		30		30		30
Guaiacol	0.585	1.00 ug/L		30		30		30
alpha-Terpineol	0.420	1.00 ug/L						
Perylene								
2,6-Dichlorophenol								
Diphenyl ether								
N-Nitrosomethylethylamine								
Surr: 2-Fluorophenol			33-120					
Surr: Phenol-d5			38-120					
Surr: 2-Chlorophenol-d4			41-120					
Surr: 1,2-Dichlorobenzene-d4			20-120					
Surr: Nitrobenzene-d5			27-120					
Surr: 2-Fluorobiphenyl			33-120					
Surr: 2,4,6-Tribromophenol			52-120					
Surr: p-Terphenyl-d14			28-120					
Surr: 1,4-Dioxane-d8			39-120					
1,4-Dichlorobenzene-d4								
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Di-n-Octylphthalate-d4								
Perylene-d12								

Analytical Method Information

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8082A PCB Water 0.01 in Water (EPA 8082A)

Preservation: Cool <6°C

Container: Glass NM, Amber, 1000 mL **Amount Required:** 2000 mL **Hold Time:** 365 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1)				30	54-120	30	54-120	30
Aroclor-1016 (2)				30	54-120	30	54-120	30
Aroclor-1016 (3)				30	54-120	30	54-120	30
Aroclor-1016 (4)				30	54-120	30	54-120	30
Aroclor 1016 [2C]	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (2) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (3) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (4) [2C]				30	54-120	30	54-120	30
Aroclor 1221	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

Analytical Method Information
(Continued)

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8082A PCB Water 0.01 in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1)				30	51-128	30	51-128	30
Aroclor-1260 (2)				30	51-128	30	51-128	30
Aroclor-1260 (3)				30	51-128	30	51-128	30
Aroclor-1260 (4)				30	51-128	30	51-128	30
Aroclor-1260 (5)				30	51-128	30	51-128	30
Aroclor 1260 [2C]	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (2) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (3) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (4) [2C]				30	51-128	30	51-128	30
Aroclor 1262	0.00276	0.0100 ug/L		30				
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			29-120					
Surr: Tetrachlorometaxylene			32-120					
Surr: Decachlorobiphenyl [2C]			29-120					
Surr: Tetrachlorometaxylene [2C]			32-120					
Surr: DCB			29-120					
Surr: TCX			32-120					
Surr: DCB [2C]			29-120					
Surr: TCX [2C]			32-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 01/14/2016 9:47 am

8081B Pest in Water (EPA 8081B)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
alpha-BHC	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane)	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC	0.00870	0.0500 ug/L		30	45-145	30	15-145	30
Heptachlor	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane)	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane)	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene	0.0123	0.100 ug/L		30	20-120	30	20-120	30
Hexachlorobenzene	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE	0.0344	0.100 ug/L		30				
2,4'-DDD	0.0121	0.100 ug/L		30				
2,4'-DDT	0.00920	0.100 ug/L		30				
Oxychlordane	0.0356	0.100 ug/L		30				
cis-Nonachlor	0.00950	0.100 ug/L		30				
trans-Nonachlor	0.00860	0.100 ug/L		30				
Mirex	0.0104	0.100 ug/L		30				
Hexachloroethane	0.00940	0.0500 ug/L		30				
Toxaphene	1.25	5.00 ug/L						
Chlordane, technical		1.00 ug/L						
alpha-BHC [2C]	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC [2C]	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane) [2C]	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC [2C]	0.00870	0.0500 ug/L		30	15-145	30	15-145	30
Heptachlor [2C]	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin [2C]	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide [2C]	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane) [2C]	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane) [2C]	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I [2C]	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE [2C]	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin [2C]	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin [2C]	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II [2C]	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD [2C]	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde [2C]	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT [2C]	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate [2C]	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone [2C]	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor [2C]	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene [2C]	0.0123	0.100 ug/L		30	20-120	30	20-120	30

Analytical Method Information

(Continued)

Printed: 01/14/2016 9:47 am

8081B Pest in Water (EPA 8081B) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Hexachlorobenzene [2C]	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE [2C]	0.0344	0.100 ug/L		30				
2,4'-DDD [2C]	0.0121	0.100 ug/L		30				
2,4'-DDT [2C]	0.00920	0.100 ug/L		30				
Oxychlordane [2C]	0.0356	0.100 ug/L		30				
cis-Nonachlor [2C]	0.00950	0.100 ug/L		30				
trans-Nonachlor [2C]	0.00860	0.100 ug/L		30				
Mirex [2C]	0.0104	0.100 ug/L		30				
Hexachloroethane [2C]	0.00940	0.0500 ug/L		30				
Toxaphene [2C]	1.25	5.00 ug/L						
Chlordane, technical [2C]		1.00 ug/L						
Surr: Decachlorobiphenyl			11-144	30				
Surr: Tetrachlorometaxylene			30-120					
Surr: Decachlorobiphenyl [2C]			11-144	30				
Surr: Tetrachlorometaxylene [2C]			30-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 01/14/2016 9:47 am

TPH_NW HCID in Water (NWTPH-HCID)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Gasoline Range Organics (Tol-C12)		0.250 mg/L						
Diesel Range Organics (C12-C24)	0.0300	0.500 mg/L						
Motor Oil Range Organics (C24-C38)	0.0600	1.00 mg/L						
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

Analytical Method Information

(Continued)

Printed: 05/07/2015 8:05 am

Met 6010C in Water (EPA 6010C)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum	0.00757	0.0500 mg/L		20	75-125	20	80-120	20
Antimony	0.00628	0.0500 mg/L		20	75-125	20	80-120	20
Arsenic	0.00333	0.0500 mg/L		20	75-125	20	80-120	20
Barium	0.00133	0.00300 mg/L		20	75-125	20	80-120	20
Beryllium	0.000160	0.00100 mg/L		20	75-125	20	80-120	20
Boron	0.00739	0.0200 mg/L		20	75-125	20	80-120	20
Cadmium	0.000180	0.00200 mg/L		20	75-125	20	80-120	20
Calcium	0.0113	0.0500 mg/L		20	75-125	20	80-120	20
Chromium	0.00124	0.00500 mg/L		20	75-125	20	80-120	20
Cobalt	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Copper	0.000920	0.00200 mg/L		20	75-125	20	80-120	20
Iron	0.00750	0.0500 mg/L		20	75-125	20	80-120	20
Lead	0.00155	0.0200 mg/L		20	75-125	20	80-120	20
Magnesium	0.00961	0.0500 mg/L		20	75-125	20	80-120	20
Manganese	0.000280	0.00100 mg/L		20	75-125	20	80-120	20
Molybdenum	0.000790	0.00500 mg/L		20	75-125	20	80-120	20
Nickel	0.00386	0.0100 mg/L		20	75-125	20	80-120	20
Potassium	0.0657	0.500 mg/L		20	75-125	20	80-120	20
Selenium	0.00499	0.0500 mg/L		20	75-125	20	80-120	20
Silicon	0.00817	0.0600 mg/L		20	75-125	20	80-120	20
Silver	0.000430	0.00300 mg/L		20	75-125	20	80-120	20
Sodium	0.0114	0.500 mg/L		20	75-125	20	80-120	20
Sodium-1	0.0114	50.0 mg/L		20	75-125	20	80-120	20
Strontium	0.0000900	0.00100 mg/L		20	75-125	20	80-120	20
Thallium	0.00310	0.0500 mg/L		20	75-125	20	80-120	20
Tin	0.00141	0.0100 mg/L		20	75-125	20	80-120	20
Titanium	0.00211	0.00500 mg/L		20	75-125	20	80-120	20
Vanadium	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Zinc	0.00145	0.0100 mg/L		20	75-125	20	80-120	20

Analytical Method Information

Analyte	DL	LOQ	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
Met 200.8 (EPA 200.8) in Water								
Preservation: pH<2; HNO3, Cool <6°C								
Container: HDPE NM, 500 mL, 1:1 HNO3			**Minimum Sample Volume:** 500 mL			**Hold Time:** 180 days		
Aluminum-27	0.00160	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-121	0.0000100	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-123	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75a	0.0000480	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75b	0.0000920	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-135	0.0000200	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-137	0.0000190	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Beryllium-9	0.0000210	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-111	0.0000100	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-114	0.00000500	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Calcium-43	0.00398	0.0500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-52	0.0000450	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-53	0.000118	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Cobalt-59	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Copper-63	0.000158	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Copper-65	0.000236	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Iron-54	0.00575	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Iron-57	0.00388	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Lead-208	0.0000460	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Magnesium-24	0.000297	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Manganese-55	0.0000220	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Molybdenum-98	0.0000130	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Nickel-60	0.0000790	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Nickel-62	0.0000890	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Potassium-39	0.00294	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Selenium-82	0.000127	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Selenium-78	0.000324	0.00200 mg/L		20	75 - 125	20	80 - 120	20
Silver-107	0.00000800	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Sodium-23	0.00283	0.100 mg/L		20	75 - 125	20	80 - 120	20
Thallium-205	0.00000400	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51a	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51b	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Zinc-66	0.000497	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-67	0.000531	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-68	0.000524	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

Analytical Method Information

Printed: 01/14/2016 9:48 am

Met 7470A Hg Low Level in Water (EPA 7470A)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3

Amount Required: 500 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00000260	0.0000200 mg/L		20	75-125	20	80-120	20

ASVS : 00022

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-11-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 18:36
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	70.2%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-6-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 18:54
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	97.2%
Tetrachlorometaxylene	70.2%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 19:12
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	93.0%
Tetrachlorometaxylene	66.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-7-1215-D**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 19:30
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	77.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Client ID	DCBP	TCMX	TOT OUT
MB-121815	65.2%	60.8%	0
LCS-121815	84.5%	70.5%	0
LCSD-121815	75.5%	66.0%	0
LMW-11-1215	100%	70.2%	0
LMW-6-1215	97.2%	70.2%	0
LMW-7-1215	93.0%	66.0%	0
LMW-7-1215-D	114%	77.0%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(11-144)	(11-144)
(TCMX) = Tetrachlorometaxylene	(30-120)	(30-120)

Prep Method: SW3510C
Log Number Range: 15-24545 to 15-24548

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-121815
METHOD BLANK

Lab Sample ID: MB-121815
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 17:42
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	65.2%
Tetrachlorometaxylene	60.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LCS-121815**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-121815
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted LCS/LCSD: 12/18/15

Date Analyzed LCS: 01/04/16 18:00
LCSD: 01/04/16 18:18
Instrument/Analyst LCS: ECD6/YZ
LCSD: ECD6/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 5.0 mL
LCSD: 5.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Sulfur Cleanup: No
Silica Gel: No

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
alpha-BHC	0.168	0.200	84.0%	0.163	0.200	81.5%	3.0%
beta-BHC	0.166	0.200	83.0%	0.160	0.200	80.0%	3.7%
delta-BHC	0.173	0.200	86.5%	0.168	0.200	84.0%	2.9%
gamma-BHC (Lindane)	0.171	0.200	85.5%	0.164	0.200	82.0%	4.2%
Heptachlor	0.160	0.200	80.0%	0.151	0.200	75.5%	5.8%
Aldrin	0.160	0.200	80.0%	0.150	0.200	75.0%	6.5%
Heptachlor Epoxide	0.161	0.200	80.5%	0.157	0.200	78.5%	2.5%
Endosulfan I	0.163	0.200	81.5%	0.156	0.200	78.0%	4.4%
Dieldrin	0.309	0.400	77.2%	0.315	0.400	78.8%	1.9%
4,4'-DDE	0.318	0.400	79.5%	0.312	0.400	78.0%	1.9%
Endrin	0.433	0.400	108%	0.408	0.400	102%	5.9%
Endosulfan II	0.440	0.400	110%	0.403	0.400	101%	8.8%
4,4'-DDD	0.446	0.400	112%	0.421	0.400	105%	5.8%
Endosulfan Sulfate	0.343	0.400	85.8%	0.331	0.400	82.8%	3.6%
4,4'-DDT	0.429	0.400	107%	0.402	0.400	100%	6.5%
Methoxychlor	1.93	2.00	96.5%	1.80	2.00	90.0%	7.0%
Endrin Ketone	0.360	0.400	90.0%	0.346	0.400	86.5%	4.0%
Endrin Aldehyde	0.369	0.400	92.2%	0.357	0.400	89.2%	3.3%
trans-Chlordane	0.158	0.200	79.0%	0.155	0.200	77.5%	1.9%
cis-Chlordane	0.153	0.200	76.5%	0.152	0.200	76.0%	0.7%

Pest/PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	84.5%	75.5%
Tetrachlorometaxylene	70.5%	66.0%

Results reported in µg/L (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank-121515
SAMPLE

Lab Sample ID: ASV5A
LIMS ID: 15-24544
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 13:46

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank-121515
SAMPLE

Lab Sample ID: ASV5A
LIMS ID: 15-24544
Matrix: Water
Date Analyzed: 12/23/15 13:46

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.8%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: LMW-11-1215**
Page 1 of 2 **SAMPLE**

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 03/18/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:36

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.20	< 0.20 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	1.0	< 1.0 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	5.0	< 5.0 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.20	< 0.20 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	5.0	< 5.0 U
74-88-4	Iodomethane	0.23	1.0	< 1.0 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.20	< 0.20 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.50	< 0.50 U

ASV5 00032Rev

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/23/15 16:36

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.50	< 0.50 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.20	< 0.20 U
142-28-9	1,3-Dichloropropane	0.06	0.20	< 0.20 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.20	< 0.20 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.20	< 0.20 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.50	< 0.50 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	100%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ASVS:00033Rev

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:57

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Date Analyzed: 12/23/15 16:57

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	101%
Bromofluorobenzene	96.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 17:18

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Date Analyzed: 12/23/15 17:18

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	99.5%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 17:39

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Date Analyzed: 12/23/15 17:39

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	100%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
ASV5A	Trip Blank-121515	10	101%	99.8%	100%	100%	0
MB-122315A	Method Blank	10	100%	99.4%	99.7%	101%	0
LCS-122315A	Lab Control	10	95.3%	101%	99.1%	97.8%	0
LCSD-122315A	Lab Control Dup	10	99.9%	102%	101%	101%	0
ASV5B	LMW-11-1215	10	107%	100%	98.9%	102%	0
ASV5C	LMW-6-1215	10	108%	101%	96.9%	102%	0
ASV5D	LMW-7-1215	10	106%	99.5%	97.7%	104%	0
ASV5E	LMW-7-1215-D	10	108%	100%	98.5%	103%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-24544 to 15-24548

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: MB-122315A
METHOD BLANK

Lab Sample ID: MB-122315A
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 13:25

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	**Carbon Disulfide**	**0.04**	**0.20**	**0.10 J**
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	**Tetrachloroethene**	**0.05**	**0.20**	**0.05 J**
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	**1,3-Dichlorobenzene**	**0.04**	**0.20**	**0.04 J**
106-46-7	**1,4-Dichlorobenzene**	**0.04**	**0.20**	**0.05 J**
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: MB-122315A**
 METHOD BLANK

Lab Sample ID: MB-122315A QC Report No: ASV5-Golder Associates
LIMS ID: 15-24545 Project: Landsburg
Matrix: Water 9231000002
Date Analyzed: 12/23/15 13:25

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	**1,3,5-Trimethylbenzene**	**0.02**	**0.20**	**0.02 J**
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	**n-Propylbenzene**	**0.02**	**0.20**	**0.03 J**
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	**tert-Butylbenzene**	**0.03**	**0.20**	**0.03 J**
135-98-8	**sec-Butylbenzene**	**0.02**	**0.20**	**0.03 J**
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	**n-Butylbenzene**	**0.02**	**0.20**	**0.05 J**
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	99.4%
Bromofluorobenzene	99.7%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: LCS-122315A**
Page 1 of 2 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-122315A
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 12/23/15 12:43
LCSD: 12/23/15 13:04

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.50	10.0	95.0%	10.1	10.0	101%	6.1%
Bromomethane	8.78	10.0	87.8%	9.30	10.0	93.0%	5.8%
Vinyl Chloride	9.96	10.0	99.6%	10.8	10.0	108%	8.1%
Chloroethane	9.64	10.0	96.4%	11.2	10.0	112%	15.0%
Methylene Chloride	9.02	10.0	90.2%	9.52	10.0	95.2%	5.4%
Acetone	41.9	50.0	83.8%	49.9	50.0	99.8%	17.4%
Carbon Disulfide	9.58 B	10.0	95.8%	10.1 B	10.0	101%	5.3%
1,1-Dichloroethene	9.40	10.0	94.0%	10.1	10.0	101%	7.2%
1,1-Dichloroethane	9.50	10.0	95.0%	10.2	10.0	102%	7.1%
trans-1,2-Dichloroethene	9.39	10.0	93.9%	9.99	10.0	99.9%	6.2%
cis-1,2-Dichloroethene	9.56	10.0	95.6%	10.0	10.0	100%	4.5%
Chloroform	9.49	10.0	94.9%	10.2	10.0	102%	7.2%
1,2-Dichloroethane	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
2-Butanone	42.9	50.0	85.8%	51.3	50.0	103%	17.8%
1,1,1-Trichloroethane	9.38	10.0	93.8%	10.3	10.0	103%	9.3%
Carbon Tetrachloride	6.41 Q	10.0	64.1%	6.86 Q	10.0	68.6%	6.8%
Vinyl Acetate	7.81	10.0	78.1%	9.26	10.0	92.6%	17.0%
Bromodichloromethane	9.36	10.0	93.6%	10.3	10.0	103%	9.6%
1,2-Dichloropropane	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
cis-1,3-Dichloropropene	9.70	10.0	97.0%	10.6	10.0	106%	8.9%
Trichloroethene	9.47	10.0	94.7%	10.2	10.0	102%	7.4%
Dibromochloromethane	6.75 Q	10.0	67.5%	7.60 Q	10.0	76.0%	11.8%
1,1,2-Trichloroethane	9.37	10.0	93.7%	10.6	10.0	106%	12.3%
Benzene	9.69	10.0	96.9%	10.5	10.0	105%	8.0%
trans-1,3-Dichloropropene	7.47	10.0	74.7%	8.32	10.0	83.2%	10.8%
2-Chloroethylvinylether	9.39	10.0	93.9%	10.8	10.0	108%	14.0%
Bromoform	5.95 Q	10.0	59.5%	6.98 Q	10.0	69.8%	15.9%
4-Methyl-2-Pentanone (MIBK)	44.0	50.0	88.0%	53.4	50.0	107%	19.3%
2-Hexanone	41.5	50.0	83.0%	51.9	50.0	104%	22.3%
Tetrachloroethene	8.89 B	10.0	88.9%	9.43 B	10.0	94.3%	5.9%
1,1,2,2-Tetrachloroethane	9.11	10.0	91.1%	10.6	10.0	106%	15.1%
Toluene	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
Chlorobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
Ethylbenzene	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
Styrene	10.0	10.0	100%	10.9	10.0	109%	8.6%
Trichlorofluoromethane	9.86	10.0	98.6%	11.0	10.0	110%	10.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.66	10.0	96.6%	10.1	10.0	101%	4.5%
m,p-Xylene	19.2	20.0	96.0%	20.9	20.0	104%	8.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C **Sample ID: LCS-122315A**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-122315A QC Report No: ASV5-Golder Associates
LIMS ID: 15-24545 Project: Landsburg
Matrix: Water 9231000002

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.90	10.0	99.0%	10.7	10.0	107%	7.8%
1,2-Dichlorobenzene	9.21	10.0	92.1%	10.2	10.0	102%	10.2%
1,3-Dichlorobenzene	9.44 B	10.0	94.4%	10.1 B	10.0	101%	6.8%
1,4-Dichlorobenzene	9.02 B	10.0	90.2%	9.79 B	10.0	97.9%	8.2%
Acrolein	42.3	50.0	84.6%	49.9	50.0	99.8%	16.5%
Iodomethane	8.07	10.0	80.7%	8.73	10.0	87.3%	7.9%
Acrylonitrile	9.10	10.0	91.0%	10.1	10.0	101%	10.4%
1,1-Dichloropropene	9.66	10.0	96.6%	10.5	10.0	105%	8.3%
Dibromomethane	8.96	10.0	89.6%	9.86	10.0	98.6%	9.6%
1,1,1,2-Tetrachloroethane	7.50	10.0	75.0%	8.21	10.0	82.1%	9.0%
1,2-Dibromo-3-chloropropane	6.89	10.0	68.9%	8.76	10.0	87.6%	23.9%
1,2,3-Trichloropropane	9.17	10.0	91.7%	10.4	10.0	104%	12.6%
trans-1,4-Dichloro-2-butene	7.82	10.0	78.2%	9.63	10.0	96.3%	20.7%
1,3,5-Trimethylbenzene	9.88 B	10.0	98.8%	10.6 B	10.0	106%	7.0%
1,2,4-Trimethylbenzene	10.0	10.0	100%	10.8	10.0	108%	7.7%
Hexachlorobutadiene	9.34	10.0	93.4%	10.1	10.0	101%	7.8%
1,2-Dibromoethane	9.91	10.0	99.1%	11.2	10.0	112%	12.2%
Bromochloromethane	9.71	10.0	97.1%	10.4	10.0	104%	6.9%
2,2-Dichloropropane	9.08	10.0	90.8%	9.70	10.0	97.0%	6.6%
1,3-Dichloropropane	9.40	10.0	94.0%	10.6	10.0	106%	12.0%
Isopropylbenzene	9.97	10.0	99.7%	10.7	10.0	107%	7.1%
n-Propylbenzene	9.94 B	10.0	99.4%	10.6 B	10.0	106%	6.4%
Bromobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
2-Chlorotoluene	9.76	10.0	97.6%	10.5	10.0	105%	7.3%
4-Chlorotoluene	9.52	10.0	95.2%	10.3	10.0	103%	7.9%
tert-Butylbenzene	9.87 B	10.0	98.7%	10.6 B	10.0	106%	7.1%
sec-Butylbenzene	10.0 B	10.0	100%	10.8 B	10.0	108%	7.7%
4-Isopropyltoluene	10.1	10.0	101%	10.8	10.0	108%	6.7%
n-Butylbenzene	10.0 B	10.0	100%	10.9 B	10.0	109%	8.6%
1,2,4-Trichlorobenzene	9.19	10.0	91.9%	10.1	10.0	101%	9.4%
Naphthalene	9.02	10.0	90.2%	10.5	10.0	105%	15.2%
1,2,3-Trichlorobenzene	9.11	10.0	91.1%	10.4	10.0	104%	13.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.3%	99.9%
d8-Toluene	101%	102%
Bromofluorobenzene	99.1%	101%
d4-1,2-Dichlorobenzene	97.8%	101%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 15:08
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/17/15 15:08

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.6%	2-Fluorobiphenyl	82.8%
d14-p-Terphenyl	94.0%	d4-1,2-Dichlorobenzene	73.6%
d5-Phenol	67.5%	2-Fluorophenol	68.8%
2,4,6-Tribromophenol	104%	d4-2-Chlorophenol	74.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 15:42
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Date Analyzed: 12/17/15 15:42

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	84.8%
d14-p-Terphenyl	94.8%	d4-1,2-Dichlorobenzene	72.8%
d5-Phenol	71.7%	2-Fluorophenol	70.7%
2,4,6-Tribromophenol	104%	d4-2-Chlorophenol	76.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 16:15
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Date Analyzed: 12/17/15 16:15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.2%	2-Fluorobiphenyl	76.4%
d14-p-Terphenyl	74.4%	d4-1,2-Dichlorobenzene	66.8%
d5-Phenol	65.9%	2-Fluorophenol	67.2%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	71.5%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 16:48
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Date Analyzed: 12/17/15 16:48

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	82.0%
d14-p-Terphenyl	73.6%	d4-1,2-Dichlorobenzene	71.2%
d5-Phenol	67.5%	2-Fluorophenol	69.1%
2,4,6-Tribromophenol	99.7%	d4-2-Chlorophenol	73.6%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-121615
METHOD BLANK

Lab Sample ID: MB-121615
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 13:29
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: MB-121615
METHOD BLANK

Lab Sample ID: MB-121615
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/17/15 13:29

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	62.8%	2-Fluorobiphenyl	74.0%
d14-p-Terphenyl	91.6%	d4-1,2-Dichlorobenzene	61.6%
d5-Phenol	62.9%	2-Fluorophenol	61.6%
2,4,6-Tribromophenol	96.3%	d4-2-Chlorophenol	68.5%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
MB-121615	62.8%	74.0%	91.6%	61.6%	62.9%	61.6%	96.3%	68.5%	0
LCS-121615	52.8%	64.4%	68.4%	54.4%	46.4%	54.4%	87.5%	58.1%	0
LCSD-121615	68.8%	84.8%	88.8%	70.4%	68.8%	68.5%	114%	74.9%	0
LMW-11-1215	67.6%	82.8%	94.0%	73.6%	67.5%	68.8%	104%	74.9%	0
LMW-6-1215	68.8%	84.8%	94.8%	72.8%	71.7%	70.7%	104%	76.0%	0
LMW-7-1215	65.2%	76.4%	74.4%	66.8%	65.9%	67.2%	94.9%	71.5%	0
LMW-7-1215-D	68.8%	82.0%	73.6%	71.2%	67.5%	69.1%	99.7%	73.6%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(27-120)	(27-120)
(FBP) = 2-Fluorobiphenyl	(33-120)	(33-120)
(TPH) = d14-p-Terphenyl	(28-130)	(28-130)
(DCB) = d4-1,2-Dichlorobenzene	(20-120)	(20-120)
(PHL) = d5-Phenol	(38-120)	(38-120)
(2FP) = 2-Fluorophenol	(33-120)	(33-120)
(TBP) = 2,4,6-Tribromophenol	(52-131)	(52-131)
(2CP) = d4-2-Chlorophenol	(41-120)	(41-120)

Prep Method: SW3520C
Log Number Range: 15-24545 to 15-24548

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-121615
LCS/LCSD

Lab Sample ID: LCS-121615
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted LCS/LCSD: 12/16/15

Date Analyzed LCS: 12/17/15 14:02
LCSD: 12/17/15 14:35
Instrument/Analyst LCS: NT6/JZ
LCSD: NT6/JZ
GPC Cleanup: NO

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	10.8	25.0	43.2%	15.7	25.0	62.8%	37.0%
Bis-(2-Chloroethyl) Ether	15.3	25.0	61.2%	20.2	25.0	80.8%	27.6%
2-Chlorophenol	12.6	25.0	50.4%	16.8	25.0	67.2%	28.6%
1,3-Dichlorobenzene	13.6	25.0	54.4%	16.6	25.0	66.4%	19.9%
1,4-Dichlorobenzene	14.4	25.0	57.6%	17.7	25.0	70.8%	20.6%
Benzyl Alcohol	7.4	25.0	29.6%	19.6	25.0	78.4%	90.4%
1,2-Dichlorobenzene	14.5	25.0	58.0%	18.2	25.0	72.8%	22.6%
2-Methylphenol	11.2	25.0	44.8%	15.4	25.0	61.6%	31.6%
2,2'-Oxybis(1-Chloropropane)	11.3 Q	25.0	45.2%	15.4 Q	25.0	61.6%	30.7%
4-Methylphenol	11.8	25.0	47.2%	16.5	25.0	66.0%	33.2%
N-Nitroso-Di-N-Propylamine	13.1 Q	25.0	52.4%	18.1 Q	25.0	72.4%	32.1%
Hexachloroethane	11.7	25.0	46.8%	13.8	25.0	55.2%	16.5%
Nitrobenzene	14.6	25.0	58.4%	19.2	25.0	76.8%	27.2%
Isophorone	14.1 Q	25.0	56.4%	19.0 Q	25.0	76.0%	29.6%
2-Nitrophenol	16.8 Q	25.0	67.2%	22.9 Q	25.0	91.6%	30.7%
2,4-Dimethylphenol	35.0	75.0	46.7%	44.1	75.0	58.8%	23.0%
Benzoic Acid	66.4	138	48.1%	93.8	138	68.0%	34.2%
bis(2-Chloroethoxy) Methane	5.7	25.0	22.8%	21.5	25.0	86.0%	116%
2,4-Dichlorophenol	39.7	75.0	52.9%	50.9	75.0	67.9%	24.7%
1,2,4-Trichlorobenzene	15.7	25.0	62.8%	19.3	25.0	77.2%	20.6%
Naphthalene	15.6	25.0	62.4%	19.8	25.0	79.2%	23.7%
4-Chloroaniline	18.7	75.0	24.9%	53.1	75.0	70.8%	95.8%
Hexachlorobutadiene	13.8	25.0	55.2%	15.9	25.0	63.6%	14.1%
4-Chloro-3-methylphenol	38.2	75.0	50.9%	49.6	75.0	66.1%	26.0%
2-Methylnaphthalene	17.0	25.0	68.0%	22.0	25.0	88.0%	25.6%
Hexachlorocyclopentadiene	44.3	75.0	59.1%	59.6	75.0	79.5%	29.5%
2,4,6-Trichlorophenol	42.7	75.0	56.9%	56.9	75.0	75.9%	28.5%
2,4,5-Trichlorophenol	43.2	75.0	57.6%	57.1	75.0	76.1%	27.7%
2-Chloronaphthalene	18.4	25.0	73.6%	24.0	25.0	96.0%	26.4%
2-Nitroaniline	43.0	75.0	57.3%	56.3	75.0	75.1%	26.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LCS-121615
LCS/LCSD

Lab Sample ID: LCS-121615
LIMS ID: 15-24545
Matrix: Water
Date Analyzed LCS: 12/17/15 14:02
LCSD: 12/17/15 14:35

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Dimethylphthalate	19.4		25.0	77.6%	25.7		25.0	103%	27.9%
Acenaphthylene	8.2		25.0	32.8%	21.9		25.0	87.6%	91.0%
3-Nitroaniline	65.5		75.0	87.3%	86.6		75.0	115%	27.7%
Acenaphthene	17.3		25.0	69.2%	24.0		25.0	96.0%	32.4%
2,4-Dinitrophenol	97.4	Q	138	70.6%	123	Q	138	89.1%	23.2%
4-Nitrophenol	28.9	Q	75.0	38.5%	38.0	Q	75.0	50.7%	27.2%
Dibenzofuran	17.6		25.0	70.4%	23.1		25.0	92.4%	27.0%
2,6-Dinitrotoluene	67.0	Q	75.0	89.3%	87.1	Q	75.0	116%	26.1%
2,4-Dinitrotoluene	66.5	Q	75.0	88.7%	85.8	Q	75.0	114%	25.3%
Diethylphthalate	17.7		25.0	70.8%	23.6		25.0	94.4%	28.6%
4-Chlorophenyl-phenylether	18.2		25.0	72.8%	24.6		25.0	98.4%	29.9%
Fluorene	17.0		25.0	68.0%	22.3		25.0	89.2%	27.0%
4-Nitroaniline	69.1	Q	75.0	92.1%	89.5	Q	75.0	119%	25.7%
4,6-Dinitro-2-Methylphenol	94.7		138	68.6%	129		138	93.5%	30.7%
N-Nitrosodiphenylamine	18.2		25.0	72.8%	26.5		25.0	106%	37.1%
4-Bromophenyl-phenylether	20.8		25.0	83.2%	29.9		25.0	120%	35.9%
Hexachlorobenzene	21.0		25.0	84.0%	30.1		25.0	120%	35.6%
Pentachlorophenol	49.6	Q	75.0	66.1%	69.2	Q	75.0	92.3%	33.0%
Phenanthrene	17.4		25.0	69.6%	23.4		25.0	93.6%	29.4%
Carbazole	6.3		25.0	25.2%	27.5		25.0	110%	125%
Anthracene	16.3		25.0	65.2%	23.4		25.0	93.6%	35.8%
Di-n-Butylphthalate	18.5		25.0	74.0%	24.4		25.0	97.6%	27.5%
Fluoranthene	18.7		25.0	74.8%	25.1		25.0	100%	29.2%
Pyrene	13.1		25.0	52.4%	21.8		25.0	87.2%	49.9%
Butylbenzylphthalate	6.7		25.0	26.8%	24.5		25.0	98.0%	114%
3,3'-Dichlorobenzidine	41.8		75.0	55.7%	64.7		75.0	86.3%	43.0%
Benzo(a)anthracene	16.8		25.0	67.2%	23.1		25.0	92.4%	31.6%
bis(2-Ethylhexyl)phthalate	20.0		25.0	80.0%	26.5		25.0	106%	28.0%
Chrysene	17.4		25.0	69.6%	23.6		25.0	94.4%	30.2%
Di-n-Octyl phthalate	20.0		25.0	80.0%	26.7		25.0	107%	28.7%
Benzo(b)fluoranthene	17.6		25.0	70.4%	23.1		25.0	92.4%	27.0%
Benzo(k)fluoranthene	17.5		25.0	70.0%	23.2		25.0	92.8%	28.0%
Benzo(a)pyrene	11.1		25.0	44.4%	25.5		25.0	102%	78.7%
Indeno(1,2,3-cd)pyrene	16.6		25.0	66.4%	27.2		25.0	109%	48.4%
Dibenz(a,h)anthracene	19.6		25.0	78.4%	26.8		25.0	107%	31.0%
Benzo(g,h,i)perylene	15.0		25.0	60.0%	27.0		25.0	108%	57.1%
3&4-Methylphenol	11.8		25.0	47.2%	16.5		25.0	66.0%	33.2%
1-Methylnaphthalene	16.2		25.0	64.8%	20.8		25.0	83.2%	24.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-121615
LCS/LCSD

Lab Sample ID: LCS-121615
LIMS ID: 15-24545
Matrix: Water
Date Analyzed LCS: 12/17/15 14:02
LCSD: 12/17/15 14:35

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Total Benzofluoranthenes	35.1	50.0	70.2%	46.2	50.0	92.4%	27.3%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	52.8%	68.8%
2-Fluorobiphenyl	64.4%	84.8%
d14-p-Terphenyl	68.4%	88.8%
d4-1,2-Dichlorobenzene	54.4%	70.4%
d5-Phenol	46.4%	68.8%
2-Fluorophenol	54.4%	68.5%
2,4,6-Tribromophenol	87.5%	114%
d4-2-Chlorophenol	58.1%	74.9%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:13
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	69.8%
Tetrachlorometaxylene	49.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:35
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	62.2%
Tetrachlorometaxylene	53.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:56
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	56.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 19:18
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	58.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-122115	69.0%	29-120	53.0%	32-120	0
LCS-122115	67.5%	29-120	54.8%	32-120	0
LCSD-122115	74.0%	29-120	60.8%	32-120	0
LMW-11-1215	69.8%	29-120	49.5%	32-120	0
LMW-6-1215	62.2%	29-120	53.8%	32-120	0
LMW-7-1215	70.8%	29-120	56.8%	32-120	0
LMW-7-1215-D	70.8%	29-120	58.5%	32-120	0

Prep Method: SW3510C
Log Number Range: 15-24545 to 15-24548

FORM-II SW8082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-122115
METHOD BLANK

Lab Sample ID: MB-122115
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 17:08
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	69.0%
Tetrachlorometaxylene	53.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/21/15

Date Analyzed LCS: 12/26/15 17:30
LCSD: 12/26/15 17:51
Instrument/Analyst LCS: ECD7/JGR
LCSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount LCS: 1000 mL
LCSD: 1000 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	0.036	0.050	72.0%	0.040	0.050	80.0%	10.5%
Aroclor 1260	0.038	0.050	76.0%	0.042	0.050	84.0%	10.0%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	67.5%	74.0%
Tetrachlorometaxylene	54.8%	60.8%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Matrix: Water

Data Release Authorized:
Reported: 12/18/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-121715 15-24545	Method Blank	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 83.5%
ASV5B 15-24545	LMW-11-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 86.8%
ASV5C 15-24546	LMW-6-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 82.6%
ASV5D 15-24547	LMW-7-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 76.1%
ASV5E 15-24548	LMW-7-1215-D HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 83.7%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Client ID	O-TER	TOT OUT
MB-121715	83.5%	0
LMW-11-1215	86.8%	0
LMW-6-1215	82.6%	0
LMW-7-1215	76.1%	0
LMW-7-1215-D	83.7%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-24545 to 15-24548

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	**7440-38-2**	**Arsenic**	0.030	3.0	**7.4**	
3010A	12/18/15	6010C	12/29/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**58,800**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,620**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**28,300**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**144**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**2,130**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**30,400**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
DUPLICATE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010C	1,000 U	1,000 U	0.0%	+/- 1,000	L
Antimony	200.8	3 U	3 U	0.0%	+/- 3	L
Arsenic	200.8	7	7	0.0%	+/- 3	L
Barium	6010C	500 U	500 U	0.0%	+/- 500	L
Beryllium	6010C	2 U	2 U	0.0%	+/- 2	L
Cadmium	6010C	2 U	2 U	0.0%	+/- 2	L
Calcium	6010C	58,800	58,200	1.0%	+/- 20%	
Chromium	6010C	1,000 U	1,000 U	0.0%	+/- 1,000	L
Cobalt	6010C	10 U	10 U	0.0%	+/- 10	L
Copper	6010C	3 U	3 U	0.0%	+/- 3	L
Iron	6010C	1,620	1,590	1.9%	+/- 20%	
Lead	200.8	10 U	10 U	0.0%	+/- 10	L
Magnesium	6010C	28,300	28,100	0.7%	+/- 20%	
Manganese	6010C	140	140	0.0%	+/- 20%	
Nickel	6010C	20 U	20 U	0.0%	+/- 20	L
Potassium	6010C	2,130	2,140	0.5%	+/- 500	L
Selenium	200.8	5 U	5 U	0.0%	+/- 5	L
Silver	6010C	3 U	3 U	0.0%	+/- 3	L
Sodium	6010C	30,400	30,200	0.7%	+/- 20%	
Thallium	200.8	2 U	2 U	0.0%	+/- 2	L
Vanadium	6010C	3 U	3 U	0.0%	+/- 3	L
Zinc	6010C	20 U	20 U	0.0%	+/- 20	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
MATRIX SPIKE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010C	1,000 U	2,030	2,000	102%	
Antimony	200.8	3 U	22	25	88.0%	
Arsenic	200.8	7	31	25	96.0%	
Barium	6010C	500 U	2,340	2,000	117%	
Beryllium	6010C	2 U	502	500	100%	
Cadmium	6010C	2 U	503	500	101%	
Calcium	6010C	58,800	66,100	10,000	73.0%	H
Chromium	6010C	1,000 U	1,000 U	500	NR	N
Cobalt	6010C	10 U	480	500	96.0%	
Copper	6010C	3 U	498	500	99.6%	
Iron	6010C	1,620	3,610	2,000	99.5%	
Lead	200.8	10 U	20	20	100%	
Magnesium	6010C	28,300	36,800	10,000	85.0%	
Manganese	6010C	140	620	500	96.0%	
Nickel	6010C	20 U	500	500	100%	
Potassium	6010C	2,130	12,200	10,000	101%	
Selenium	200.8	5 U	72	80	90.0%	
Silver	6010C	3 U	525	500	105%	
Sodium	6010C	30,400	39,600	10,000	92.0%	
Thallium	200.8	2 U	23	25	92.0%	
Vanadium	6010C	3 U	503	500	101%	
Zinc	6010C	20 U	490	500	98.0%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**27,700**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**2,420**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**14,000**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**36**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**720**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**7,600**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LMW-7-1215**
Page 1 of 1 **SAMPLE**

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	**7440-39-3**	**Barium**	1.49	500	**520**	
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**56,900**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,160**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**26,600**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**141**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**3,180**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**43,900**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	**7440-39-3**	**Barium**	1.49	500	**513**	
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**55,800**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,130**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**25,900**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**139**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**3,110**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**43,000**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ASV5MB
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-70-2	Calcium	1.2	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	7439-95-4	Magnesium	7.0	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7439-96-5	Manganese	0.11	20	20	U
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	7440-09-7	Potassium	15.0	500	500	U
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-23-5	Sodium	4.2	500	500	U
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: ASV5LCS
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010C	1990	2000	99.5%	
Antimony	200.8	23.8	25.0	95.2%	
Arsenic	200.8	23.9	25.0	95.6%	
Barium	6010C	2060	2000	103%	
Beryllium	6010C	491	500	98.2%	
Cadmium	6010C	503	500	101%	
Calcium	6010C	10000	10000	100%	
Chromium	6010C	499	500	99.8%	
Cobalt	6010C	495	500	99.0%	
Copper	6010C	499	500	99.8%	
Iron	6010C	2030	2000	102%	
Lead	200.8	25.9	25.0	104%	
Magnesium	6010C	10400	10000	104%	
Manganese	6010C	476	500	95.2%	
Nickel	6010C	520	500	104%	
Potassium	6010C	10100	10000	101%	
Selenium	200.8	76.8	80.0	96.0%	
Silver	6010C	533	500	107%	
Sodium	6010C	10200	10000	102%	
Thallium	200.8	25.6	25.0	102%	
Vanadium	6010C	506	500	101%	
Zinc	6010C	500	500	100%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/15/15
Page 1 of 1

QC Report No: ASV9-Golder Associates
Project: Landsburg
9231000002

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-11-1215 ASV9A 15-24560	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-6-1215 ASV9B 15-24561	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-7-1215 ASV9C 15-24562	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-7-1215-D ASV9D 15-24563	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
MB-122315 Method Blank	NA	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
DUPLICATE

Lab Sample ID: ASV9A
LIMS ID: 15-24560
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ASV9-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Mercury	7470A	20.0 U	20.0 U	0.0%	+/- 20.0	L

Reported in ng/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
MATRIX SPIKE

Lab Sample ID: ASV9A
LIMS ID: 15-24560
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ASV9-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Mercury	7470A	20.0 U	103	100	103%	

Reported in ng/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ASV9LCS
LIMS ID: 15-24563
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ASV9-Golder Associates
Project: Landsburg
9231000002
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Mercury	7470A	186	200	93.0%	

Reported in ng/L

N-Control limit not met
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 7, 2016

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

Client Project Name: Landsburg Mine
Client Project Number: 923-1000-002.R273
ARI ID: ASY3, ATA3 and ATI2

Dear Mr. Zimmerman:

Please find enclosed Chain-of-Custody (COC) record, sample receipt documentation, and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted five water samples trip blanks in good condition on December 16, 2015. There were no discrepancies between the COC and the sample containers' labels. Per client request, the metals reporting limits were raised to meet client required limits.

The samples were analyzed for VOCs, PCBs, HCID, Pesticides, SVOCs, Total Metals, as requested on the COC. Quality control analyses are included for your review.

The VOCs CCALs are out of control low for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The VOCs method blanks contained contamination at "J" qualified values. All associated samples and QC that contain analyte have been flagged with a "B" qualifier.

The VOCs LCS and/or LCSD are out of control low for several analytes.

The 12/23/15 SVOCs method blank contained bis(2-Ethylhexyl)phthalete. All associated QC that contain analyte have been flagged with a "B" qualifier.

The 12/22/15 SVOCs CCALs are out of control high for all associated FORM III "Q" flagged analytes with the exception of 2,2--oxybis(1-Chloropropane) and 4-Nitrophenol which are out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The 12/23/15 SVOCs CCALs are out of control high for all associated FORM III "Q" flagged analytes with the exception of 2,2--oxybis(1-Chloropropane), 4-Chloroaniline, 4-Nitrophenol and N-nitroso-di-n-propylamine which are out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The SVOCs 12/23/15 LCS is out of control both high and low for several analytes with several RPDs outside of control limits. The LCSD is in control.

The matrix spike was not recovered for chromium due to elevated RLs.

The PCBs LCS/LCSD sample duplicate RPD is outside of control limits.

No other analytical complications were noted.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

An electronic copy of this report and all supporting raw data will remain on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

Respectfully,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

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

ARI Assigned Number: ASY3	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G Zimmerman, J. Lamberts	
Client Project Name: LandsBerg	
Client Project #: 923100002, R273	Samplers: J. Lamberts/J. Miller

Page: 1 of 1	
Date: 12/16/2015	Ice Present?
No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	VOC Client List	PCB (LL) Pesticides	SVOC8270 Client List	TPH HCID	TAML Total Metals	TAML Dissolved Δ Metals			Notes/Comments
Trip Blank 121615	12/16/15	—	W	3									Δ Field Filtered (Please Analyze under Existing MSA between Golder + ARI)
LMW-3-1215	↓	0930	W	17	X	X	X	X	X	Hold			
EB-1215	↓	0945	W	17	X	X	X	X	X	↓			
LMW-5-1215	↓	1120	W	17	X	X	X	X	X	↓			
LMW-8-1215	↓	1210	W	17	X	X	X	X	X	↓			
LMW-9-1215	↓	1330	W	17	X	X	X	X	X	↓			

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
- Ecology EIMEDD *Client Specific RLs + Analyte list. Please CC jlamberts + gzimmerman@golder.com	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: J. Lamberts	Printed Name: Tyler Rankin	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 12/16/2015 1508	Date & Time: 12-16-15 1508	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, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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

PRESERVATION VERIFICATION 12/17/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ASY3**

Inquiry Number: NONE
Analysis Requested: 12/17/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 12/16/15

Project #: 92310000002.R273
Project: Lands Burg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24679 **ASY3B**	LMW-3-1215						TOT															
15-24680 **ASY3C**	EB-1215						TOT															
15-24681 **ASY3D**	LMW-5-1215						TOT															
15-24682 **ASY3E**	LMW-8-1215						TOT															
15-24683 **ASY3F**	LMW-9-1215						TOT															

ASY3 :92999

Checked By CA Date 12/17/15

PRESERVATION VERIFICATION 12/18/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ATA3**

Inquiry Number: NONE
Analysis Requested: 12/17/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Kelly
VTSR: 12/16/15

Project #: 9231000002.R273
Project: Lands Berg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24732 **ATA3A**	LMW-3-1215						TOT															
15-24733 **ATA3B**	EB-1215						TOT															
15-24734 **ATA3C**	LMW-5-1215						TOT															
15-24735 **ATA3D**	LMW-8-1215						TOT															
15-24736 **ATA3E**	LMW-9-1215						TOT															

ATA3 : 9999S

Checked By CA Date 12/18/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder Project Name: Landsberg

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

Assigned ARI Job No: ASY3/AIA3 and AIE2 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to 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) 3.9 2.1 5.0 4.5 3.4 1.4

Time: _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D005276

Cooler Accepted by: TR Date: 12-16-15 Time: 1508

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? ... (Bubble Wrap) (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA (YES) NO

Were all bottles sealed in individual plastic bags? YES (NO)

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) _____

Was Sample Split by ARI : (NA) YES Date/Time:_____ Equipment:_____ Split by:_____

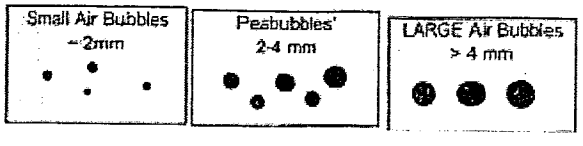
Samples Logged by: _____ Date: 12-17-15 Time: 1350

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ASY3
Client: Golder Associates
Project Event: 92310000002.R273
Project Name: Lands Burg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	Trip Blank 121615	ASY3A	15-24678	Water	12/16/15	12/16/15 15:08
2.	LMW-3-1215	ASY3B	15-24679	Water	12/16/15 09:30	12/16/15 15:08
3.	EB-1215	ASY3C	15-24680	Water	12/16/15 09:45	12/16/15 15:08
4.	LMW-5-1215	ASY3D	15-24681	Water	12/16/15 11:20	12/16/15 15:08
5.	LMW-8-1215	ASY3E	15-24682	Water	12/16/15 12:10	12/16/15 15:08
6.	LMW-9-1215	ASY3F	15-24683	Water	12/16/15 13:30	12/16/15 15:08

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ATA3
Client: Golder Associates
Project Event: 9231000002.R273
Project Name: Lands Berg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LMW-3-1215	ATA3A	15-24732	Water	12/16/15 09:30	12/16/15 15:08
2.	EB-1215	ATA3B	15-24733	Water	12/16/15 09:45	12/16/15 15:08
3.	LMW-5-1215	ATA3C	15-24734	Water	12/16/15 11:20	12/16/15 15:08
4.	LMW-8-1215	ATA3D	15-24735	Water	12/16/15 12:10	12/16/15 15:08
5.	LMW-9-1215	ATA3E	15-24736	Water	12/16/15 13:30	12/16/15 15:08

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ATI2
Client: Golder Associates
Project Event: 92310000002.R273
Project Name: Lands Burg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LMW-3-1215	ATI2A	15-25006	Water	12/16/15 09:30	12/16/15 15:08

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
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).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

Analytical Method Information

Printed: 01/14/2016 9:47 am

8260C VOA in Water (EPA 8260C)

Preservation: pH<2; HCL, Cool <6°C

Container: VOA Vial, Clear, 40 mL, HCL

Amount Required: 120 mL

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chloromethane	0.0948	0.500 ug/L		30	59-134	30	59-134	30
Vinyl Chloride	0.0572	0.200 ug/L		30	70-130	30	70-130	30
Bromomethane	0.252	1.00 ug/L		30	52-142	30	52-142	30
Chloroethane	0.0861	0.200 ug/L		30	47-172	30	47-172	30
Trichlorofluoromethane	0.0375	0.200 ug/L		30	70-138	30	70-138	30
Acrolein	2.48	5.00 ug/L		30	45-144	30	45-144	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0429	0.200 ug/L		30	73-125	30	73-125	30
Acetone	2.06	5.00 ug/L		30	46-157	30	46-157	30
1,1-Dichloroethene	0.0540	0.200 ug/L		30	76-123	30	76-123	30
Bromoethane	0.0412	0.200 ug/L		30	72-125	30	72-125	30
Iodomethane	0.227	1.00 ug/L		30	46-143	30	46-143	30
Methylene Chloride	0.485	1.00 ug/L		30	68-129	30	68-129	30
Acrylonitrile	0.604	1.00 ug/L		30	65-124	30	65-124	30
Carbon Disulfide	0.0370	0.200 ug/L		30	69-129	30	69-129	30
trans-1,2-Dichloroethene	0.0485	0.200 ug/L		30	72-124	30	72-124	30
Vinyl Acetate	0.0688	0.200 ug/L		30	62-133	30	62-133	30
1,1-Dichloroethane	0.0533	0.200 ug/L		30	77-122	30	77-122	30
2-Butanone	0.814	5.00 ug/L		30	67-134	30	67-134	30
2,2-Dichloropropane	0.0518	0.200 ug/L		30	71-134	30	71-134	30
cis-1,2-Dichloroethene	0.0427	0.200 ug/L		30	79-120	30	79-120	30
Chloroform	0.0273	0.200 ug/L		30	77-123	30	77-123	30
Bromochloromethane	0.0607	0.200 ug/L		30	77-120	30	77-120	30
1,1,1-Trichloroethane	0.0408	0.200 ug/L		30	78-124	30	78-124	30
1,1-Dichloropropene	0.0340	0.200 ug/L		30	78-120	30	78-120	30
Carbon tetrachloride	0.0439	0.200 ug/L		30	69-129	30	69-139	30
1,2-Dichloroethane	0.0717	0.200 ug/L		30	71-125	30	71-125	30
Benzene	0.0266	0.200 ug/L		30	80-120	30	80-120	30
Trichloroethene	0.0489	0.200 ug/L		30	80-120	30	80-120	30
1,2-Dichloropropane	0.0352	0.200 ug/L		30	79-120	30	79-120	30
Bromodichloromethane	0.0506	0.200 ug/L		30	78-120	30	78-120	30
Dibromomethane	0.145	0.200 ug/L		30	77-120	30	77-120	30
2-Chloroethyl vinyl ether	0.250	1.00 ug/L		30	67-125	30	67-125	30
4-Methyl-2-Pentanone	0.974	5.00 ug/L		30	72-132	30	72-132	30
cis-1,3-Dichloropropene	0.0610	0.200 ug/L		30	79-124	30	79-124	30
Toluene	0.0399	0.200 ug/L		30	80-120	30	80-120	30
trans-1,3-Dichloropropene	0.0815	0.200 ug/L		30	77-126	30	77-126	30
2-Hexanone	0.902	5.00 ug/L		30	70-135	30	70-135	30
1,1,2-Trichloroethane	0.129	0.200 ug/L		30	77-120	30	77-120	30
1,3-Dichloropropane	0.0622	0.200 ug/L		30	80-120	30	80-120	30
Tetrachloroethene	0.0474	0.200 ug/L		30	80-120	30	80-120	30
Dibromochloromethane	0.0481	0.200 ug/L		30	74-121	30	74-121	30
1,2-Dibromoethane	0.0745	0.200 ug/L		30	79-120	30	79-120	30
Chlorobenzene	0.0230	0.200 ug/L		30	80-120	30	80-120	30
Ethylbenzene	0.0371	0.200 ug/L		30	78-122	30	78-122	30
1,1,1,2-Tetrachloroethane	0.0396	0.200 ug/L		30	76-123	30	76-123	30
m,p-Xylene	0.0522	0.400 ug/L		30	78-126	30	78-126	30
o-Xylene	0.0349	0.200 ug/L		30	76-127	30	76-127	30
Xylenes, total	0.0871	0.600 ug/L		30	76-127	30	76-127	30
Styrene	0.0454	0.200 ug/L		30	79-129	30	79-129	30
Bromoform	0.0618	0.200 ug/L		30	57-131	30	57-131	30
1,1,2,2-Tetrachloroethane	0.0598	0.200 ug/L		30	73-120	30	73-120	30
1,2,3-Trichloropropane	0.131	0.500 ug/L		30	69-127	30	69-127	30
trans-1,4-Dichloro 2-Butene	0.324	1.00 ug/L		30	49-144	30	49-144	30
n-Propylbenzene	0.0235	0.200 ug/L		30	73-130	30	73-130	30

Analytical Method Information
(Continued)

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8260C VOA in Water (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Bromobenzene	0.0605	0.200 ug/L		30	79-120	30	79-120	30
Isopropyl Benzene	0.0212	0.200 ug/L		30	78-129	30	79-129	30
2-Chlorotoluene	0.0236	0.200 ug/L		30	80-121	30	80-121	30
4-Chlorotoluene	0.0159	0.200 ug/L		30	78-122	30	78-122	30
t-Butylbenzene	0.0256	0.200 ug/L		30	73-129	30	73-129	30
1,3,5-Trimethylbenzene	0.0150	0.200 ug/L		30	77-128	30	77-128	30
1,2,4-Trimethylbenzene	0.0243	0.200 ug/L		30	76-129	30	76-129	30
s-Butylbenzene	0.0237	0.200 ug/L		30	75-128	30	75-128	30
4-Isopropyl Toluene	0.0263	0.200 ug/L		30	74-131	30	74-121	30
1,3-Dichlorobenzene	0.0362	0.200 ug/L		30	79-120	30	79-120	30
1,4-Dichlorobenzene	0.0397	0.200 ug/L		30	77-120	30	77-120	30
n-Butylbenzene	0.0248	0.200 ug/L		30	73-130	30	73-130	30
1,2-Dichlorobenzene	0.0365	0.200 ug/L		30	78-120	30	78-120	30
1,2-Dibromo-3-chloropropane	0.366	0.500 ug/L		30	60-124	30	60-124	30
1,2,4-Trichlorobenzene	0.107	0.500 ug/L		30	54-131	30	54-131	30
Hexachloro-1,3-Butadiene	0.0734	0.500 ug/L		30	55-132	30	55-132	30
Naphthalene	0.118	0.500 ug/L		30	50-135	30	50-135	30
1,2,3-Trichlorobenzene	0.110	0.500 ug/L		30	45-137	30	45-137	30
Dichlorodifluoromethane	0.0521	0.200 ug/L		30	41-159	30	41-159	30
Methyl tert-butyl Ether	0.0729	0.500 ug/L		30	74-127	30	74-127	30
n-Hexane	0.100	0.200 ug/L		30	70-130	30	70-130	30
2-Pentanone	5.00	5.00 ug/L		30	64-184	30	64-184	30
Surr: Dibromofluoromethane			80-120					
Surr: 1,2-Dichloroethane-d4			80-129					
Surr: Toluene-d8			80-120					
Surr: 4-Bromofluorobenzene			80-120					
Surr: 1,2-Dichlorobenzene-d4			80-120					
Pentafluorobenzene								
Chlorobenzene-d5								
1,4-Difluorobenzene								
1,4-Dichlorobenzene-d4								

Analytical Method Information

Printed: 01/14/2016 9:47 am

8270D SVOC (LiqLiq) in Water (EPA 8270D)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Phenol	0.271	1.00 ug/L		30	48-120	30	48-120	30
bis(2-chloroethyl) ether	0.248	1.00 ug/L		30	50-120	30	50-120	30
2-Chlorophenol	0.220	1.00 ug/L		30	48-120	30	48-120	30
1,3-Dichlorobenzene	0.266	1.00 ug/L		30	24-120	30	24-120	30
1,4-Dichlorobenzene	0.267	1.00 ug/L		30	24-120	30	24-120	30
1,2-Dichlorobenzene	0.250	1.00 ug/L		30	28-120	30	28-120	30
Benzyl alcohol	0.552	2.00 ug/L		30	26-120	30	26-120	30
2,2'-Oxybis(1-chloropropane)	0.241	1.00 ug/L		30	47-120	30	47-120	30
2-Methylphenol	0.211	1.00 ug/L		30	44-120	30	44-120	30
Hexachloroethane	0.300	2.00 ug/L		30	18-120	30	18-120	30
N-Nitroso-di-n-Propylamine	0.269	1.00 ug/L		30	50-120	30	50-120	30
4-Methylphenol	0.468	2.00 ug/L		30	48-120	30	48-120	30
Nitrobenzene	0.253	1.00 ug/L		30	49-120	30	49-120	30
Isophorone	0.423	1.00 ug/L		30	57-120	30	57-120	30
2-Nitrophenol	0.263	3.00 ug/L		30	47-120	30	47-120	30
2,4-Dimethylphenol	1.12	3.00 ug/L		30	37-120	30	37-120	30
Bis(2-Chloroethoxy)methane	0.237	1.00 ug/L		30	48-120	30	48-120	30
2,4-Dichlorophenol	1.11	3.00 ug/L		30	54-120	30	54-120	30
1,2,4-Trichlorobenzene	0.254	1.00 ug/L		30	28-120	30	28-120	30
Naphthalene	0.246	1.00 ug/L		30	34-120	30	34-120	30
Benzoic acid	3.92	20.0 ug/L		30	37-120	30	37-120	30
4-Chloroaniline	1.73	5.00 ug/L		30	10-132	30	10-132	30
2,6-Dinitrotoluene	1.14	3.00 ug/L		30	52-120	30	52-120	30
Hexachlorobutadiene	0.335	3.00 ug/L		30	18-120	30	18-120	30
4-Chloro-3-Methylphenol	1.12	3.00 ug/L		30	59-120	30	59-120	30
Hexachlorocyclopentadiene	1.08	5.00 ug/L		30	16-120	30	16-120	30
2,4,6-Trichlorophenol	1.04	3.00 ug/L		30	53-120	30	53-120	30
2,4,5-Trichlorophenol	1.10	5.00 ug/L		30	58-120	30	58-120	30
2-Chloronaphthalene	0.248	1.00 ug/L		30	42-120	30	42-120	30
2-Nitroaniline	1.46	3.00 ug/L		30	31-120	30	31-120	30
Acenaphthylene	0.268	1.00 ug/L		30	46-120	30	46-120	30
Dimethylphthalate	0.259	1.00 ug/L		30	61-120	30	61-120	30
Acenaphthene	0.254	1.00 ug/L		30	43-120	30	43-120	30
3-Nitroaniline	1.53	3.00 ug/L		30	36-120	30	36-120	30
2-Methylnaphthalene	0.295	1.00 ug/L		30	27-120	30	27-120	30
2,4-Dinitrophenol	3.35	20.0 ug/L		30	40-120	30	40-120	30
Dibenzofuran	0.309	1.00 ug/L		30	36-120	30	36-120	30
4-Nitrophenol	1.75	10.0 ug/L		30	44-129	30	44-129	30
2,4-Dinitrotoluene	1.12	3.00 ug/L		30	51-120	30	51-120	30
Fluorene	0.291	1.00 ug/L		30	42-120	30	42-120	30
4-Chlorophenylphenyl ether	0.267	1.00 ug/L		30	54-120	30	54-120	30
Diethyl phthalate	0.273	1.00 ug/L		30	60-120	30	60-120	30
4-Nitroaniline	2.02	3.00 ug/L		30	25-132	30	25-132	30
4,6-Dinitro-2-methylphenol	3.61	10.0 ug/L		30	56-120	30	56-120	30
N-Nitrosodiphenylamine	0.299	1.00 ug/L		30	48-120	30	48-120	30
4-Bromophenyl phenyl ether	0.238	1.00 ug/L		30	56-120	30	56-120	30
Hexachlorobenzene	0.280	1.00 ug/L		30	54-120	30	54-120	30
Pentachlorophenol	1.89	10.0 ug/L		30	40-131	30	40-131	30
Phenanthrene	0.318	1.00 ug/L		30	53-120	30	53-120	30
Anthracene	0.265	1.00 ug/L		30	47-120	30	47-120	30
Carbazole	0.310	1.00 ug/L		30	57-120	30	57-120	30
Di-n-butylphthalate	0.291	1.00 ug/L		30	65-120	30	65-120	30
Fluoranthene	0.297	1.00 ug/L		30	53-120	30	53-120	30
Pyrene	0.284	1.00 ug/L		30	47-120	30	47-120	30

Analytical Method Information
(Continued)

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8270D SVOC (LiqLiq) in Water (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Butylbenzylphthalate	0.299	1.00 ug/L		30	54-120	30	54-120	30
Benzo(a)anthracene	0.287	1.00 ug/L		30	51-120	30	51-120	30
3,3'-Dichlorobenzidine	1.77	5.00 ug/L		30	44-120	30	44-120	30
Chrysene	0.321	1.00 ug/L		30	48-120	30	48-120	30
bis(2-Ethylhexyl)phthalate	2.14	3.00 ug/L		30	58-120	30	58-120	30
Di-n-Octylphthalate	0.268	1.00 ug/L		30	62-120	30	62-120	30
Benzo(b)fluoranthene	0.317	1.00 ug/L		30	49-120	30	49-120	30
Benzo(k)fluoranthene	0.335	1.00 ug/L		30	47-120	30	47-120	30
Benzo(a)pyrene	0.297	1.00 ug/L		30	45-120	30	45-120	30
Indeno(1,2,3-cd)pyrene	0.359	1.00 ug/L		30	41-120	30	41-120	30
Dibenzo(a,h)anthracene	0.394	1.00 ug/L		30	35-120	30	35-120	30
Benzo(g,h,i)perylene	0.391	1.00 ug/L		30	35-120	30	35-120	30
N-Nitrosodimethylamine	1.33	3.00 ug/L		30	41-120	30	41-120	30
Aniline	0.973	1.00 ug/L		30	21-120	30	21-120	30
1-Methylnaphthalene	0.258	1.00 ug/L		30	55-120	30	55-120	30
Azobenzene (1,2-DP-Hydrazine)	0.228	1.00 ug/L		30	55-120	30	55-120	30
Retene	4.01	20.0 ug/L		30		30		30
Pyridine	86.6	100 ug/L		30	10-147	30	10-147	30
Benzofluoranthenes, Total	0.801	2.00 ug/L		30	30-160	30	30-160	30
2,3,4,6-Tetrachlorophenol	0.244	1.00 ug/L		30	30-160	30	30-160	30
Benzidine		10.0 ug/L		30	57-120	30	57-120	30
Tetrachloroguaiacol				30		30		30
1,2,4,5-Tetrachlorobenzene	0.381	1.00 ug/L		30		30		30
1,4-Dioxane	0.506	2.00 ug/L		40	40-120	40		40
3,4,5-Trichloroguaiacol	0.470	1.00 ug/L		30		30		30
3,4,6-Trichloroguaiacol		1.00 ug/L		30		30		30
4,5,6-Trichloroguaiacol	0.476	1.00 ug/L		30		30		30
Guaiacol	0.585	1.00 ug/L		30		30		30
alpha-Terpineol	0.420	1.00 ug/L						
Perylene								
2,6-Dichlorophenol								
Diphenyl ether								
N-Nitrosomethylethylamine								
Surr: 2-Fluorophenol			33-120					
Surr: Phenol-d5			38-120					
Surr: 2-Chlorophenol-d4			41-120					
Surr: 1,2-Dichlorobenzene-d4			20-120					
Surr: Nitrobenzene-d5			27-120					
Surr: 2-Fluorobiphenyl			33-120					
Surr: 2,4,6-Tribromophenol			52-120					
Surr: p-Terphenyl-d14			28-120					
Surr: 1,4-Dioxane-d8			39-120					
1,4-Dichlorobenzene-d4								
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Di-n-Octylphthalate-d4								
Perylene-d12								

Analytical Method Information

Printed: 01/14/2016 9:47 am

8082A PCB Water 0.01 in Water (EPA 8082A)

Preservation: Cool <6°C

Container: Glass NM, Amber, 1000 mL

Amount Required: 2000 mL

Hold Time: 365 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1)				30	54-120	30	54-120	30
Aroclor-1016 (2)				30	54-120	30	54-120	30
Aroclor-1016 (3)				30	54-120	30	54-120	30
Aroclor-1016 (4)				30	54-120	30	54-120	30
Aroclor 1016 [2C]	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (2) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (3) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (4) [2C]				30	54-120	30	54-120	30
Aroclor 1221	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

Analytical Method Information
(Continued)

Printed: 01/14/2016 9:47 am

8082A PCB Water 0.01 in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1)				30	51-128	30	51-128	30
Aroclor-1260 (2)				30	51-128	30	51-128	30
Aroclor-1260 (3)				30	51-128	30	51-128	30
Aroclor-1260 (4)				30	51-128	30	51-128	30
Aroclor-1260 (5)				30	51-128	30	51-128	30
Aroclor 1260 [2C]	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (2) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (3) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (4) [2C]				30	51-128	30	51-128	30
Aroclor 1262	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			29-120					
Surr: Tetrachlorometaxylene			32-120					
Surr: Decachlorobiphenyl [2C]			29-120					
Surr: Tetrachlorometaxylene [2C]			32-120					
Surr: DCB			29-120					
Surr: TCX			32-120					
Surr: DCB [2C]			29-120					
Surr: TCX [2C]			32-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 01/14/2016 9:47 am

8081B Pest in Water (EPA 8081B)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
alpha-BHC	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane)	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC	0.00870	0.0500 ug/L		30	45-145	30	15-145	30
Heptachlor	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane)	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane)	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene	0.0123	0.100 ug/L		30	20-120	30	20-120	30
Hexachlorobenzene	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE	0.0344	0.100 ug/L		30				
2,4'-DDD	0.0121	0.100 ug/L		30				
2,4'-DDT	0.00920	0.100 ug/L		30				
Oxychlordane	0.0356	0.100 ug/L		30				
cis-Nonachlor	0.00950	0.100 ug/L		30				
trans-Nonachlor	0.00860	0.100 ug/L		30				
Mirex	0.0104	0.100 ug/L		30				
Hexachloroethane	0.00940	0.0500 ug/L		30				
Toxaphene	1.25	5.00 ug/L						
Chlordane, technical		1.00 ug/L						
alpha-BHC [2C]	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC [2C]	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane) [2C]	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC [2C]	0.00870	0.0500 ug/L		30	15-145	30	15-145	30
Heptachlor [2C]	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin [2C]	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide [2C]	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane) [2C]	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane) [2C]	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I [2C]	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE [2C]	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin [2C]	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin [2C]	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II [2C]	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD [2C]	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde [2C]	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT [2C]	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate [2C]	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone [2C]	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor [2C]	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene [2C]	0.0123	0.100 ug/L		30	20-120	30	20-120	30

Analytical Method Information
(Continued)

Printed: 01/14/2016 9:47 am

8081B Pest in Water (EPA 8081B) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Hexachlorobenzene [2C]	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE [2C]	0.0344	0.100 ug/L		30				
2,4'-DDD [2C]	0.0121	0.100 ug/L		30				
2,4'-DDT [2C]	0.00920	0.100 ug/L		30				
Oxychlordane [2C]	0.0356	0.100 ug/L		30				
cis-Nonachlor [2C]	0.00950	0.100 ug/L		30				
trans-Nonachlor [2C]	0.00860	0.100 ug/L		30				
Mirex [2C]	0.0104	0.100 ug/L		30				
Hexachloroethane [2C]	0.00940	0.0500 ug/L		30				
Toxaphene [2C]	1.25	5.00 ug/L						
Chlordane, technical [2C]		1.00 ug/L						
Surr: Decachlorobiphenyl			11-144	30				
Surr: Tetrachlorometaxylene			30-120					
Surr: Decachlorobiphenyl [2C]			11-144	30				
Surr: Tetrachlorometaxylene [2C]			30-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 01/14/2016 9:47 am

TPH_NW HCID in Water (NWTPH-HCID)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Gasoline Range Organics (Tol-C12)		0.250 mg/L						
Diesel Range Organics (C12-C24)	0.0300	0.500 mg/L						
Motor Oil Range Organics (C24-C38)	0.0600	1.00 mg/L						
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

Analytical Method Information

(Continued)

Printed: 05/07/2015 8:05 am

Met 6010C in Water (EPA 6010C)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3

Amount Required: 500 mL

Hold Time: 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum	0.00757	0.0500 mg/L		20	75-125	20	80-120	20
Antimony	0.00628	0.0500 mg/L		20	75-125	20	80-120	20
Arsenic	0.00333	0.0500 mg/L		20	75-125	20	80-120	20
Barium	0.00133	0.00300 mg/L		20	75-125	20	80-120	20
Beryllium	0.000160	0.00100 mg/L		20	75-125	20	80-120	20
Boron	0.00739	0.0200 mg/L		20	75-125	20	80-120	20
Cadmium	0.000180	0.00200 mg/L		20	75-125	20	80-120	20
Calcium	0.0113	0.0500 mg/L		20	75-125	20	80-120	20
Chromium	0.00124	0.00500 mg/L		20	75-125	20	80-120	20
Cobalt	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Copper	0.000920	0.00200 mg/L		20	75-125	20	80-120	20
Iron	0.00750	0.0500 mg/L		20	75-125	20	80-120	20
Lead	0.00155	0.0200 mg/L		20	75-125	20	80-120	20
Magnesium	0.00961	0.0500 mg/L		20	75-125	20	80-120	20
Manganese	0.000280	0.00100 mg/L		20	75-125	20	80-120	20
Molybdenum	0.000790	0.00500 mg/L		20	75-125	20	80-120	20
Nickel	0.00386	0.0100 mg/L		20	75-125	20	80-120	20
Potassium	0.0657	0.500 mg/L		20	75-125	20	80-120	20
Selenium	0.00499	0.0500 mg/L		20	75-125	20	80-120	20
Silicon	0.00817	0.0600 mg/L		20	75-125	20	80-120	20
Silver	0.000430	0.00300 mg/L		20	75-125	20	80-120	20
Sodium	0.0114	0.500 mg/L		20	75-125	20	80-120	20
Sodium-1	0.0114	50.0 mg/L		20	75-125	20	80-120	20
Strontium	0.0000900	0.00100 mg/L		20	75-125	20	80-120	20
Thallium	0.00310	0.0500 mg/L		20	75-125	20	80-120	20
Tin	0.00141	0.0100 mg/L		20	75-125	20	80-120	20
Titanium	0.00211	0.00500 mg/L		20	75-125	20	80-120	20
Vanadium	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Zinc	0.00145	0.0100 mg/L		20	75-125	20	80-120	20

Analytical Method Information

Analyte	DL	LOQ	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
Met 200.8 (EPA 200.8) in Water								
Preservation: pH<2; HNO3, Cool <6°C								
Container: HDPE NM, 500 mL, 1:1 HNO3			**Minimum Sample Volume:** 500 mL			**Hold Time:** 180 days		
Aluminum-27	0.00160	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-121	0.0000100	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-123	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75a	0.0000480	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75b	0.0000920	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-135	0.0000200	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-137	0.0000190	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Beryllium-9	0.0000210	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-111	0.0000100	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-114	0.00000500	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Calcium-43	0.00398	0.0500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-52	0.0000450	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-53	0.000118	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Cobalt-59	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Copper-63	0.000158	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Copper-65	0.000236	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Iron-54	0.00575	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Iron-57	0.00388	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Lead-208	0.0000460	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Magnesium-24	0.000297	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Manganese-55	0.0000220	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Molybdenum-98	0.0000130	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Nickel-60	0.0000790	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Nickel-62	0.0000890	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Potassium-39	0.00294	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Selenium-82	0.000127	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Selenium-78	0.000324	0.00200 mg/L		20	75 - 125	20	80 - 120	20
Silver-107	0.00000800	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Sodium-23	0.00283	0.100 mg/L		20	75 - 125	20	80 - 120	20
Thallium-205	0.00000400	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51a	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51b	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Zinc-66	0.000497	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-67	0.000531	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-68	0.000524	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

Analytical Method Information

Printed: 01/14/2016 9:48 am

Met 7470A Hg Low Level in Water (EPA 7470A)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3

Amount Required: 500 mL

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00000260	0.0000200 mg/L		20	75-125	20	80-120	20

ASY3 : 00024

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ATI2A
LIMS ID: 15-25006
Matrix: Water
Data Release Authorized:
Reported: 12/29/15

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/28/15 15:04
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ATI2A
LIMS ID: 15-25006
Matrix: Water
Date Analyzed: 12/28/15 15:04

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.0%	2-Fluorobiphenyl	70.4%
d14-p-Terphenyl	84.0%	d4-1,2-Dichlorobenzene	63.2%
d5-Phenol	62.9%	2-Fluorophenol	61.9%
2,4,6-Tribromophenol	87.2%	d4-2-Chlorophenol	65.6%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-122315
METHOD BLANK

Lab Sample ID: MB-122315
LIMS ID: 15-25006
Matrix: Water
Data Release Authorized:
Reported: 12/29/15

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/23/15
Date Analyzed: 12/28/15 13:25
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-122315
METHOD BLANK

Lab Sample ID: MB-122315
LIMS ID: 15-25006
Matrix: Water
Date Analyzed: 12/28/15 13:25

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.1**	**3.0**	**7.1**
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	70.8%	2-Fluorobiphenyl	77.2%
d14-p-Terphenyl	92.4%	d4-1,2-Dichlorobenzene	68.0%
d5-Phenol	73.6%	2-Fluorophenol	70.1%
2,4,6-Tribromophenol	102%	d4-2-Chlorophenol	74.1%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
MB-122315	70.8%	77.2%	92.4%	68.0%	73.6%	70.1%	102%	74.1%	0
LCS-122315	52.8%	60.0%	74.4%	50.0%	55.2%	51.2%	84.0%	54.7%	0
LCSD-122315	72.8%	81.2%	91.6%	71.6%	75.7%	73.3%	110%	76.5%	0
LMW-3-1215	64.0%	70.4%	84.0%	63.2%	62.9%	61.9%	87.2%	65.6%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(27-120)	(27-120)
(FBP) = 2-Fluorobiphenyl	(33-120)	(33-120)
(TPH) = d14-p-Terphenyl	(28-130)	(28-130)
(DCB) = d4-1,2-Dichlorobenzene	(20-120)	(20-120)
(PHL) = d5-Phenol	(38-120)	(38-120)
(2FP) = 2-Fluorophenol	(33-120)	(33-120)
(TBP) = 2,4,6-Tribromophenol	(52-131)	(52-131)
(2CP) = d4-2-Chlorophenol	(41-120)	(41-120)

Prep Method: SW3520C
Log Number Range: 15-25006 to 15-25006

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LCS-122315
LCS/LCSD

Lab Sample ID: LCS-122315
LIMS ID: 15-25006
Matrix: Water
Data Release Authorized:
Reported: 12/29/15

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted LCS/LCSD: 12/23/15

Date Analyzed LCS: 12/28/15 13:58
LCSD: 12/28/15 14:31
Instrument/Analyst LCS: NT6/JZ
LCSD: NT6/JZ
GPC Cleanup: NO

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Phenol	11.9		25.0	47.6%	17.7		25.0	70.8%	39.2%
Bis-(2-Chloroethyl) Ether	15.5		25.0	62.0%	22.9		25.0	91.6%	38.5%
2-Chlorophenol	12.2		25.0	48.8%	18.0		25.0	72.0%	38.4%
1,3-Dichlorobenzene	12.3		25.0	49.2%	19.6		25.0	78.4%	45.8%
1,4-Dichlorobenzene	12.9		25.0	51.6%	20.6		25.0	82.4%	46.0%
Benzyl Alcohol	14.5		25.0	58.0%	21.2		25.0	84.8%	37.5%
1,2-Dichlorobenzene	13.1		25.0	52.4%	20.7		25.0	82.8%	45.0%
2-Methylphenol	11.5		25.0	46.0%	16.8		25.0	67.2%	37.5%
2,2'-Oxybis(1-Chloropropane)	12.7		25.0	50.8%	18.9		25.0	75.6%	39.2%
4-Methylphenol	12.6		25.0	50.4%	18.0		25.0	72.0%	35.3%
N-Nitroso-Di-N-Propylamine	14.9	Q	25.0	59.6%	21.3	Q	25.0	85.2%	35.4%
Hexachloroethane	10.5		25.0	42.0%	17.7		25.0	70.8%	51.1%
Nitrobenzene	14.8		25.0	59.2%	21.5		25.0	86.0%	36.9%
Isophorone	15.7		25.0	62.8%	21.9		25.0	87.6%	33.0%
2-Nitrophenol	16.2	Q	25.0	64.8%	24.0	Q	25.0	96.0%	38.8%
2,4-Dimethylphenol	33.4		75.0	44.5%	46.2		75.0	61.6%	32.2%
Benzoic Acid	69.4		138	50.3%	96.6		138	70.0%	32.8%
bis(2-Chloroethoxy) Methane	17.4		25.0	69.6%	24.9		25.0	99.6%	35.5%
2,4-Dichlorophenol	38.1		75.0	50.8%	53.3		75.0	71.1%	33.3%
1,2,4-Trichlorobenzene	14.2		25.0	56.8%	22.4		25.0	89.6%	44.8%
Naphthalene	14.5		25.0	58.0%	21.1		25.0	84.4%	37.1%
4-Chloroaniline	41.8		75.0	55.7%	58.4		75.0	77.9%	33.1%
Hexachlorobutadiene	12.2		25.0	48.8%	20.3		25.0	81.2%	49.8%
4-Chloro-3-methylphenol	39.4		75.0	52.5%	51.8		75.0	69.1%	27.2%
2-Methylnaphthalene	16.7		25.0	66.8%	24.4		25.0	97.6%	37.5%
Hexachlorocyclopentadiene	37.6		75.0	50.1%	61.7		75.0	82.3%	48.5%
2,4,6-Trichlorophenol	41.3		75.0	55.1%	56.5		75.0	75.3%	31.1%
2,4,5-Trichlorophenol	41.9		75.0	55.9%	57.4		75.0	76.5%	31.2%
2-Chloronaphthalene	17.2		25.0	68.8%	25.1		25.0	100%	37.4%
2-Nitroaniline	45.7		75.0	60.9%	61.1		75.0	81.5%	28.8%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LCS-122315
LCS/LCSD

Lab Sample ID: LCS-122315
LIMS ID: 15-25006
Matrix: Water
Date Analyzed LCS: 12/28/15 13:58
LCSD: 12/28/15 14:31

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Dimethylphthalate	20.2	25.0	80.8%	26.4	25.0	106%	26.6%
Acenaphthylene	16.7	25.0	66.8%	22.7	25.0	90.8%	30.5%
3-Nitroaniline	68.6	75.0	91.5%	89.7	75.0	120%	26.7%
Acenaphthene	17.7	25.0	70.8%	24.7	25.0	98.8%	33.0%
2,4-Dinitrophenol	99.7 Q	138	72.2%	127 Q	138	92.0%	24.1%
4-Nitrophenol	29.0 Q	75.0	38.7%	38.2 Q	75.0	50.9%	27.4%
Dibenzofuran	17.2	25.0	68.8%	23.2	25.0	92.8%	29.7%
2,6-Dinitrotoluene	67.3 Q	75.0	89.7%	89.6 Q	75.0	119%	28.4%
2,4-Dinitrotoluene	67.3 Q	75.0	89.7%	87.8 Q	75.0	117%	26.4%
Diethylphthalate	18.7	25.0	74.8%	24.4	25.0	97.6%	26.5%
4-Chlorophenyl-phenylether	18.6	25.0	74.4%	25.2	25.0	101%	30.1%
Fluorene	17.3	25.0	69.2%	23.0	25.0	92.0%	28.3%
4-Nitroaniline	70.3 Q	75.0	93.7%	93.0 Q	75.0	124%	27.8%
4,6-Dinitro-2-Methylphenol	94.6	138	68.6%	124	138	89.9%	26.9%
N-Nitrosodiphenylamine	18.8	25.0	75.2%	25.3	25.0	101%	29.5%
4-Bromophenyl-phenylether	21.6	25.0	86.4%	29.4	25.0	118%	30.6%
Hexachlorobenzene	21.6	25.0	86.4%	29.5	25.0	118%	30.9%
Pentachlorophenol	50.2 Q	75.0	66.9%	66.2 Q	75.0	88.3%	27.5%
Phenanthrene	17.5	25.0	70.0%	22.5	25.0	90.0%	25.0%
Carbazole	20.2	25.0	80.8%	26.0	25.0	104%	25.1%
Anthracene	17.6	25.0	70.4%	22.5	25.0	90.0%	24.4%
Di-n-Butylphthalate	19.4	25.0	77.6%	24.2	25.0	96.8%	22.0%
Fluoranthene	18.7	25.0	74.8%	23.5	25.0	94.0%	22.7%
Pyrene	18.1	25.0	72.4%	22.8	25.0	91.2%	23.0%
Butylbenzylphthalate	19.7	25.0	78.8%	26.0	25.0	104%	27.6%
3,3'-Dichlorobenzidine	43.5	75.0	58.0%	57.1	75.0	76.1%	27.0%
Benzo(a)anthracene	17.8	25.0	71.2%	22.6	25.0	90.4%	23.8%
bis(2-Ethylhexyl)phthalate	43.1 B	25.0	172%	28.4 B	25.0	114%	41.1%
Chrysene	17.9	25.0	71.6%	22.9	25.0	91.6%	24.5%
Di-n-Octyl phthalate	20.3	25.0	81.2%	26.0	25.0	104%	24.6%
Benzo(a)pyrene	19.4	25.0	77.6%	25.3	25.0	101%	26.4%
Indeno(1,2,3-cd)pyrene	20.1	25.0	80.4%	26.9	25.0	108%	28.9%
Dibenz(a,h)anthracene	19.9	25.0	79.6%	26.2	25.0	105%	27.3%
Benzo(g,h,i)perylene	20.1	25.0	80.4%	26.8	25.0	107%	28.6%
1-Methylnaphthalene	15.8	25.0	63.2%	23.2	25.0	92.8%	37.9%
Total Benzofluoranthenes	37.3	50.0	74.6%	46.9	50.0	93.8%	22.8%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	52.8%	72.8%
2-Fluorobiphenyl	60.0%	81.2%
d14-p-Terphenyl	74.4%	91.6%
d4-1,2-Dichlorobenzene	50.0%	71.6%
d5-Phenol	55.2%	75.7%
2-Fluorophenol	51.2%	73.3%
2,4,6-Tribromophenol	84.0%	110%
d4-2-Chlorophenol	54.7%	76.5%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 18:21
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/22/15 18:21

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.1**	**3.0**	**11**
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.0%	2-Fluorobiphenyl	83.2%
d14-p-Terphenyl	96.8%	d4-1,2-Dichlorobenzene	75.6%
d5-Phenol	73.6%	2-Fluorophenol	72.3%
2,4,6-Tribromophenol	107%	d4-2-Chlorophenol	77.9%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 18:54
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Date Analyzed: 12/22/15 18:54

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.6%	2-Fluorobiphenyl	78.0%
d14-p-Terphenyl	92.4%	d4-1,2-Dichlorobenzene	69.6%
d5-Phenol	71.2%	2-Fluorophenol	69.3%
2,4,6-Tribromophenol	97.6%	d4-2-Chlorophenol	74.1%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 19:27
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Date Analyzed: 12/22/15 19:27

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.2%	2-Fluorobiphenyl	79.6%
d14-p-Terphenyl	93.6%	d4-1,2-Dichlorobenzene	71.2%
d5-Phenol	71.5%	2-Fluorophenol	70.9%
2,4,6-Tribromophenol	98.4%	d4-2-Chlorophenol	74.4%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 20:00
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Date Analyzed: 12/22/15 20:00

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.4%	2-Fluorobiphenyl	75.6%
d14-p-Terphenyl	88.4%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	69.1%	2-Fluorophenol	68.3%
2,4,6-Tribromophenol	92.8%	d4-2-Chlorophenol	71.7%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 20:33
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Date Analyzed: 12/22/15 20:33

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.6%	2-Fluorobiphenyl	77.6%
d14-p-Terphenyl	89.6%	d4-1,2-Dichlorobenzene	69.2%
d5-Phenol	70.9%	2-Fluorophenol	69.3%
2,4,6-Tribromophenol	93.9%	d4-2-Chlorophenol	72.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: MB-122115
METHOD BLANK

Lab Sample ID: MB-122115
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 16:42
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: MB-122115
METHOD BLANK

Lab Sample ID: MB-122115
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/22/15 16:42

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	71.2%	2-Fluorobiphenyl	81.6%
d14-p-Terphenyl	97.6%	d4-1,2-Dichlorobenzene	70.8%
d5-Phenol	76.3%	2-Fluorophenol	74.1%
2,4,6-Tribromophenol	107%	d4-2-Chlorophenol	78.9%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
MB-122115	71.2%	81.6%	97.6%	70.8%	76.3%	74.1%	107%	78.9%	0
LCS-122115	72.0%	85.2%	93.2%	73.6%	73.1%	71.7%	116%	76.8%	0
LCSD-122115	71.6%	81.6%	94.4%	71.2%	73.3%	70.4%	116%	75.2%	0
LMW-3-1215	72.0%	83.2%	96.8%	75.6%	73.6%	72.3%	107%	77.9%	0
EB-1215	69.6%	78.0%	92.4%	69.6%	71.2%	69.3%	97.6%	74.1%	0
LMW-5-1215	69.2%	79.6%	93.6%	71.2%	71.5%	70.9%	98.4%	74.4%	0
LMW-8-1215	66.4%	75.6%	88.4%	68.8%	69.1%	68.3%	92.8%	71.7%	0
LMW-9-1215	67.6%	77.6%	89.6%	69.2%	70.9%	69.3%	93.9%	72.8%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(27-120)	(27-120)
(FBP) = 2-Fluorobiphenyl	(33-120)	(33-120)
(TPH) = d14-p-Terphenyl	(28-130)	(28-130)
(DCB) = d4-1,2-Dichlorobenzene	(20-120)	(20-120)
(PHL) = d5-Phenol	(38-120)	(38-120)
(2FP) = 2-Fluorophenol	(33-120)	(33-120)
(TBP) = 2,4,6-Tribromophenol	(52-131)	(52-131)
(2CP) = d4-2-Chlorophenol	(41-120)	(41-120)

Prep Method: SW3520C
Log Number Range: 15-24679 to 15-24683

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted LCS/LCSD: 12/21/15

Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48
Instrument/Analyst LCS: NT6/JZ
LCSD: NT6/JZ
GPC Cleanup: NO

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Phenol	16.1	25.0	64.4%	15.7	25.0	62.8%	2.5%
Bis-(2-Chloroethyl) Ether	20.8	25.0	83.2%	20.7	25.0	82.8%	0.5%
2-Chlorophenol	16.8	25.0	67.2%	16.9	25.0	67.6%	0.6%
1,3-Dichlorobenzene	16.6	25.0	66.4%	17.2	25.0	68.8%	3.6%
1,4-Dichlorobenzene	17.6	25.0	70.4%	18.2	25.0	72.8%	3.4%
Benzyl Alcohol	19.5	25.0	78.0%	19.9	25.0	79.6%	2.0%
1,2-Dichlorobenzene	18.1	25.0	72.4%	18.6	25.0	74.4%	2.7%
2-Methylphenol	15.4	25.0	61.6%	15.8	25.0	63.2%	2.6%
2,2'-Oxybis(1-Chloropropane)	16.8 Q	25.0	67.2%	16.8 Q	25.0	67.2%	0.0%
4-Methylphenol	16.7	25.0	66.8%	16.9	25.0	67.6%	1.2%
N-Nitroso-Di-N-Propylamine	19.1 Q	25.0	76.4%	19.3 Q	25.0	77.2%	1.0%
Hexachloroethane	13.8	25.0	55.2%	14.9	25.0	59.6%	7.7%
Nitrobenzene	19.7	25.0	78.8%	19.8	25.0	79.2%	0.5%
Isophorone	20.2	25.0	80.8%	20.4	25.0	81.6%	1.0%
2-Nitrophenol	23.2 Q	25.0	92.8%	23.2 Q	25.0	92.8%	0.0%
2,4-Dimethylphenol	42.6	75.0	56.8%	42.5	75.0	56.7%	0.2%
Benzoic Acid	90.3	138	65.4%	94.6	138	68.6%	4.7%
bis(2-Chloroethoxy) Methane	22.9	25.0	91.6%	23.0	25.0	92.0%	0.4%
2,4-Dichlorophenol	51.1	75.0	68.1%	51.3	75.0	68.4%	0.4%
1,2,4-Trichlorobenzene	19.6	25.0	78.4%	20.1	25.0	80.4%	2.5%
Naphthalene	19.8	25.0	79.2%	19.9	25.0	79.6%	0.5%
4-Chloroaniline	53.7 Q	75.0	71.6%	53.2 Q	75.0	70.9%	0.9%
Hexachlorobutadiene	16.4	25.0	65.6%	17.2	25.0	68.8%	4.8%
4-Chloro-3-methylphenol	51.9	75.0	69.2%	50.5	75.0	67.3%	2.7%
2-Methylnaphthalene	22.8	25.0	91.2%	23.2	25.0	92.8%	1.7%
Hexachlorocyclopentadiene	47.9	75.0	63.9%	44.8	75.0	59.7%	6.7%
2,4,6-Trichlorophenol	55.0	75.0	73.3%	54.0	75.0	72.0%	1.8%
2,4,5-Trichlorophenol	55.5	75.0	74.0%	54.2	75.0	72.3%	2.4%
2-Chloronaphthalene	23.8	25.0	95.2%	23.4	25.0	93.6%	1.7%
2-Nitroaniline	58.4	75.0	77.9%	56.9	75.0	75.9%	2.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24679
Matrix: Water
Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Dimethylphthalate	25.5		25.0	102%	25.2		25.0	101%	1.2%
Acenaphthylene	21.9		25.0	87.6%	21.5		25.0	86.0%	1.8%
3-Nitroaniline	84.8		75.0	113%	85.1		75.0	113%	0.4%
Acenaphthene	23.7		25.0	94.8%	23.4		25.0	93.6%	1.3%
2,4-Dinitrophenol	124	Q	138	89.9%	124	Q	138	89.9%	0.0%
4-Nitrophenol	37.7	Q	75.0	50.3%	37.4	Q	75.0	49.9%	0.8%
Dibenzofuran	22.4		25.0	89.6%	22.2		25.0	88.8%	0.9%
2,6-Dinitrotoluene	87.9	Q	75.0	117%	85.7	Q	75.0	114%	2.5%
2,4-Dinitrotoluene	85.7	Q	75.0	114%	84.3	Q	75.0	112%	1.6%
Diethylphthalate	24.0		25.0	96.0%	24.0		25.0	96.0%	0.0%
4-Chlorophenyl-phenylether	24.5		25.0	98.0%	24.2		25.0	96.8%	1.2%
Fluorene	22.2		25.0	88.8%	21.9		25.0	87.6%	1.4%
4-Nitroaniline	87.6		75.0	117%	87.1		75.0	116%	0.6%
4,6-Dinitro-2-Methylphenol	120	Q	138	87.0%	122	Q	138	88.4%	1.7%
N-Nitrosodiphenylamine	24.2		25.0	96.8%	24.4		25.0	97.6%	0.8%
4-Bromophenyl-phenylether	28.6		25.0	114%	28.9		25.0	116%	1.0%
Hexachlorobenzene	28.8		25.0	115%	29.0		25.0	116%	0.7%
Pentachlorophenol	64.9	Q	75.0	86.5%	65.3	Q	75.0	87.1%	0.6%
Phenanthrene	21.7		25.0	86.8%	21.6		25.0	86.4%	0.5%
Carbazole	24.9		25.0	99.6%	25.0		25.0	100%	0.4%
Anthracene	21.8		25.0	87.2%	21.8		25.0	87.2%	0.0%
Di-n-Butylphthalate	23.1		25.0	92.4%	22.8		25.0	91.2%	1.3%
Fluoranthene	22.6		25.0	90.4%	22.3		25.0	89.2%	1.3%
Pyrene	21.6		25.0	86.4%	21.8		25.0	87.2%	0.9%
Butylbenzylphthalate	24.8		25.0	99.2%	24.9		25.0	99.6%	0.4%
3,3'-Dichlorobenzidine	55.3		75.0	73.7%	54.6		75.0	72.8%	1.3%
Benzo(a)anthracene	21.9		25.0	87.6%	21.5		25.0	86.0%	1.8%
bis(2-Ethylhexyl)phthalate	29.6		25.0	118%	26.8		25.0	107%	9.9%
Chrysene	21.7		25.0	86.8%	21.6		25.0	86.4%	0.5%
Di-n-Octyl phthalate	24.9		25.0	99.6%	24.5		25.0	98.0%	1.6%
Benzo(b)fluoranthene	21.5		25.0	86.0%	22.6		25.0	90.4%	5.0%
Benzo(k)fluoranthene	22.6		25.0	90.4%	21.4		25.0	85.6%	5.5%
Benzo(a)pyrene	24.0		25.0	96.0%	23.5		25.0	94.0%	2.1%
Indeno(1,2,3-cd)pyrene	26.1		25.0	104%	25.6		25.0	102%	1.9%
Dibenz(a,h)anthracene	25.6		25.0	102%	25.2		25.0	101%	1.6%
Benzo(g,h,i)perylene	26.5		25.0	106%	25.9		25.0	104%	2.3%
3&4-Methylphenol	16.7		25.0	66.8%	16.9		25.0	67.6%	1.2%
1-Methylnaphthalene	21.6		25.0	86.4%	21.9		25.0	87.6%	1.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24679
Matrix: Water
Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Total Benzofluoranthenes	44.1	50.0	88.2%	43.9	50.0	87.8%	0.5%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	72.0%	71.6%
2-Fluorobiphenyl	85.2%	81.6%
d14-p-Terphenyl	93.2%	94.4%
d4-1,2-Dichlorobenzene	73.6%	71.2%
d5-Phenol	73.1%	73.3%
2-Fluorophenol	71.7%	70.4%
2,4,6-Tribromophenol	116%	116%
d4-2-Chlorophenol	76.8%	75.2%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank 121615
SAMPLE

Lab Sample ID: ASY3A
LIMS ID: 15-24678
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:29

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.10 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	**Acetone**	**2.1**	**5.0**	**2.2 J**
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank 121615
SAMPLE

Lab Sample ID: ASY3A
LIMS ID: 15-24678
Matrix: Water
Date Analyzed: 12/23/15 14:29

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.7%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:50

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/23/15 14:50

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	98.4%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:11

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	**Toluene**	**0.04**	**0.20**	**0.05 J**
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Date Analyzed: 12/23/15 15:11

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.8%
Bromofluorobenzene	98.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 2 of 2

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Date Analyzed: 12/23/15 15:33

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.4%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:54

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.24 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Date Analyzed: 12/23/15 15:54

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:15

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.17 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Date Analyzed: 12/23/15 16:15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.2%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: MB-122315A
METHOD BLANK

Lab Sample ID: MB-122315A
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 13:25

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	**Carbon Disulfide**	**0.04**	**0.20**	**0.10 J**
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	**Tetrachloroethene**	**0.05**	**0.20**	**0.05 J**
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	**1,3-Dichlorobenzene**	**0.04**	**0.20**	**0.04 J**
106-46-7	**1,4-Dichlorobenzene**	**0.04**	**0.20**	**0.05 J**
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: MB-122315A
METHOD BLANK

Lab Sample ID: MB-122315A
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/23/15 13:25

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	**1,3,5-Trimethylbenzene**	**0.02**	**0.20**	**0.02 J**
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	**n-Propylbenzene**	**0.02**	**0.20**	**0.03 J**
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	**tert-Butylbenzene**	**0.03**	**0.20**	**0.03 J**
135-98-8	**sec-Butylbenzene**	**0.02**	**0.20**	**0.03 J**
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	**n-Butylbenzene**	**0.02**	**0.20**	**0.05 J**
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	99.4%
Bromofluorobenzene	99.7%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
ASY3A	Trip Blank 121615	10	105%	99.7%	99.3%	104%	0
MB-122315A	Method Blank	10	100%	99.4%	99.7%	101%	0
LCS-122315A	Lab Control	10	95.3%	101%	99.1%	97.8%	0
LCSD-122315A	Lab Control Dup	10	99.9%	102%	101%	101%	0
ASY3B	LMW-3-1215	10	105%	98.4%	100%	104%	0
ASY3C	EB-1215	10	105%	99.8%	98.7%	103%	0
ASY3D	LMW-5-1215	10	104%	99.4%	101%	103%	0
ASY3E	LMW-8-1215	10	105%	100%	100%	102%	0
ASY3F	LMW-9-1215	10	105%	99.2%	98.9%	104%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-24678 to 15-24683

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LCS-122315A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-122315A
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 12/23/15 12:43
LCSD: 12/23/15 13:04

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.50	10.0	95.0%	10.1	10.0	101%	6.1%
Bromomethane	8.78	10.0	87.8%	9.30	10.0	93.0%	5.8%
Vinyl Chloride	9.96	10.0	99.6%	10.8	10.0	108%	8.1%
Chloroethane	9.64	10.0	96.4%	11.2	10.0	112%	15.0%
Methylene Chloride	9.02	10.0	90.2%	9.52	10.0	95.2%	5.4%
Acetone	41.9	50.0	83.8%	49.9	50.0	99.8%	17.4%
Carbon Disulfide	9.58 B	10.0	95.8%	10.1 B	10.0	101%	5.3%
1,1-Dichloroethene	9.40	10.0	94.0%	10.1	10.0	101%	7.2%
1,1-Dichloroethane	9.50	10.0	95.0%	10.2	10.0	102%	7.1%
trans-1,2-Dichloroethene	9.39	10.0	93.9%	9.99	10.0	99.9%	6.2%
cis-1,2-Dichloroethene	9.56	10.0	95.6%	10.0	10.0	100%	4.5%
Chloroform	9.49	10.0	94.9%	10.2	10.0	102%	7.2%
1,2-Dichloroethane	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
2-Butanone	42.9	50.0	85.8%	51.3	50.0	103%	17.8%
1,1,1-Trichloroethane	9.38	10.0	93.8%	10.3	10.0	103%	9.3%
Carbon Tetrachloride	6.41 Q	10.0	64.1%	6.86 Q	10.0	68.6%	6.8%
Vinyl Acetate	7.81	10.0	78.1%	9.26	10.0	92.6%	17.0%
Bromodichloromethane	9.36	10.0	93.6%	10.3	10.0	103%	9.6%
1,2-Dichloropropane	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
cis-1,3-Dichloropropene	9.70	10.0	97.0%	10.6	10.0	106%	8.9%
Trichloroethene	9.47	10.0	94.7%	10.2	10.0	102%	7.4%
Dibromochloromethane	6.75 Q	10.0	67.5%	7.60 Q	10.0	76.0%	11.8%
1,1,2-Trichloroethane	9.37	10.0	93.7%	10.6	10.0	106%	12.3%
Benzene	9.69	10.0	96.9%	10.5	10.0	105%	8.0%
trans-1,3-Dichloropropene	7.47	10.0	74.7%	8.32	10.0	83.2%	10.8%
2-Chloroethylvinylether	9.39	10.0	93.9%	10.8	10.0	108%	14.0%
Bromoform	5.95 Q	10.0	59.5%	6.98 Q	10.0	69.8%	15.9%
4-Methyl-2-Pentanone (MIBK)	44.0	50.0	88.0%	53.4	50.0	107%	19.3%
2-Hexanone	41.5	50.0	83.0%	51.9	50.0	104%	22.3%
Tetrachloroethene	8.89 B	10.0	88.9%	9.43 B	10.0	94.3%	5.9%
1,1,2,2-Tetrachloroethane	9.11	10.0	91.1%	10.6	10.0	106%	15.1%
Toluene	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
Chlorobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
Ethylbenzene	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
Styrene	10.0	10.0	100%	10.9	10.0	109%	8.6%
Trichlorofluoromethane	9.86	10.0	98.6%	11.0	10.0	110%	10.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.66	10.0	96.6%	10.1	10.0	101%	4.5%
m,p-Xylene	19.2	20.0	96.0%	20.9	20.0	104%	8.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LCS-122315A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-122315A
LIMS ID: 15-24679
Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.90	10.0	99.0%	10.7	10.0	107%	7.8%
1,2-Dichlorobenzene	9.21	10.0	92.1%	10.2	10.0	102%	10.2%
1,3-Dichlorobenzene	9.44 B	10.0	94.4%	10.1 B	10.0	101%	6.8%
1,4-Dichlorobenzene	9.02 B	10.0	90.2%	9.79 B	10.0	97.9%	8.2%
Acrolein	42.3	50.0	84.6%	49.9	50.0	99.8%	16.5%
Iodomethane	8.07	10.0	80.7%	8.73	10.0	87.3%	7.9%
Acrylonitrile	9.10	10.0	91.0%	10.1	10.0	101%	10.4%
1,1-Dichloropropene	9.66	10.0	96.6%	10.5	10.0	105%	8.3%
Dibromomethane	8.96	10.0	89.6%	9.86	10.0	98.6%	9.6%
1,1,1,2-Tetrachloroethane	7.50	10.0	75.0%	8.21	10.0	82.1%	9.0%
1,2-Dibromo-3-chloropropane	6.89	10.0	68.9%	8.76	10.0	87.6%	23.9%
1,2,3-Trichloropropane	9.17	10.0	91.7%	10.4	10.0	104%	12.6%
trans-1,4-Dichloro-2-butene	7.82	10.0	78.2%	9.63	10.0	96.3%	20.7%
1,3,5-Trimethylbenzene	9.88 B	10.0	98.8%	10.6 B	10.0	106%	7.0%
1,2,4-Trimethylbenzene	10.0	10.0	100%	10.8	10.0	108%	7.7%
Hexachlorobutadiene	9.34	10.0	93.4%	10.1	10.0	101%	7.8%
1,2-Dibromoethane	9.91	10.0	99.1%	11.2	10.0	112%	12.2%
Bromochloromethane	9.71	10.0	97.1%	10.4	10.0	104%	6.9%
2,2-Dichloropropane	9.08	10.0	90.8%	9.70	10.0	97.0%	6.6%
1,3-Dichloropropane	9.40	10.0	94.0%	10.6	10.0	106%	12.0%
Isopropylbenzene	9.97	10.0	99.7%	10.7	10.0	107%	7.1%
n-Propylbenzene	9.94 B	10.0	99.4%	10.6 B	10.0	106%	6.4%
Bromobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
2-Chlorotoluene	9.76	10.0	97.6%	10.5	10.0	105%	7.3%
4-Chlorotoluene	9.52	10.0	95.2%	10.3	10.0	103%	7.9%
tert-Butylbenzene	9.87 B	10.0	98.7%	10.6 B	10.0	106%	7.1%
sec-Butylbenzene	10.0 B	10.0	100%	10.8 B	10.0	108%	7.7%
4-Isopropyltoluene	10.1	10.0	101%	10.8	10.0	108%	6.7%
n-Butylbenzene	10.0 B	10.0	100%	10.9 B	10.0	109%	8.6%
1,2,4-Trichlorobenzene	9.19	10.0	91.9%	10.1	10.0	101%	9.4%
Naphthalene	9.02	10.0	90.2%	10.5	10.0	105%	15.2%
1,2,3-Trichlorobenzene	9.11	10.0	91.1%	10.4	10.0	104%	13.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.3%	99.9%
d8-Toluene	101%	102%
Bromofluorobenzene	99.1%	101%
d4-1,2-Dichlorobenzene	97.8%	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 21:35
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	110%
Tetrachlorometaxylene	74.8%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 21:53
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	87.0%
Tetrachlorometaxylene	76.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:11
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.31	< 0.31 Y
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	78.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-8-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:29
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	84.2%
Tetrachlorometaxylene	72.5%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-9-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:47
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	70.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-122215
METHOD BLANK

Lab Sample ID: MB-122215
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 20:41
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	89.8%
Tetrachlorometaxylene	68.8%

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Client ID	DCBP	TCMX	TOT OUT
MB-122215	89.8%	68.8%	0
LCS-122215	82.8%	71.8%	0
LCSD-122215	87.8%	62.0%	0
LMW-3-1215	110%	74.8%	0
EB-1215	87.0%	76.0%	0
LMW-5-1215	114%	78.0%	0
LMW-8-1215	84.2%	72.5%	0
LMW-9-1215	100%	70.0%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(11-144)	(11-144)
(TCMX) = Tetrachlorometaxylene	(30-120)	(30-120)

Prep Method: SW3510C
Log Number Range: 15-24679 to 15-24683

FORM-II SW8081

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Page 1 of 1

Sample ID: LCS-122215
LCS/LCSD

Lab Sample ID: LCS-122215
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted LCS/LCSD: 12/22/15

Date Analyzed LCS: 01/04/16 20:59
LCSD: 01/04/16 21:17
Instrument/Analyst LCS: ECD6/YZ
LCSD: ECD6/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 5.0 mL
LCSD: 5.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Sulfur Cleanup: No
Silica Gel: No

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
alpha-BHC	0.188	0.200	94.0%	0.172	0.200	86.0%	8.9%
beta-BHC	0.184	0.200	92.0%	0.173	0.200	86.5%	6.2%
delta-BHC	0.193	0.200	96.5%	0.186	0.200	93.0%	3.7%
gamma-BHC (Lindane)	0.190	0.200	95.0%	0.177	0.200	88.5%	7.1%
Heptachlor	0.175	0.200	87.5%	0.160	0.200	80.0%	9.0%
Aldrin	0.173	0.200	86.5%	0.161	0.200	80.5%	7.2%
Heptachlor Epoxide	0.188	0.200	94.0%	0.180	0.200	90.0%	4.3%
Endosulfan I	0.188	0.200	94.0%	0.178	0.200	89.0%	5.5%
Dieldrin	0.390	0.400	97.5%	0.373	0.400	93.2%	4.5%
4,4'-DDE	0.385	0.400	96.2%	0.358	0.400	89.5%	7.3%
Endrin	0.389	0.400	97.2%	0.352	0.400	88.0%	10.0%
Endosulfan II	0.381	0.400	95.2%	0.364	0.400	91.0%	4.6%
4,4'-DDD	0.411	0.400	103%	0.387	0.400	96.8%	6.0%
Endosulfan Sulfate	0.377	0.400	94.2%	0.315	0.400	78.8%	17.9%
4,4'-DDT	0.415	0.400	104%	0.384	0.400	96.0%	7.8%
Methoxychlor	1.79	2.00	89.5%	1.72	2.00	86.0%	4.0%
Endrin Ketone	0.392	0.400	98.0%	0.374	0.400	93.5%	4.7%
Endrin Aldehyde	0.368	0.400	92.0%	0.355	0.400	88.8%	3.6%
trans-Chlordane	0.191	0.200	95.5%	0.180	0.200	90.0%	5.9%
cis-Chlordane	0.188	0.200	94.0%	0.176	0.200	88.0%	6.6%

Pest/PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	82.8%	87.8%
Tetrachlorometaxylene	71.8%	62.0%

Results reported in µg/L (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 06:33
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	61.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 06:54
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	51.8%
Tetrachlorometaxylene	55.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:16
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	62.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:37
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.5%
Tetrachlorometaxylene	61.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:59
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	59.8%
Tetrachlorometaxylene	42.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-122315
METHOD BLANK

Lab Sample ID: MB-122315
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 04:44
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	62.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-122315	66.2%	29-120	62.0%	32-120	0
LCS-122315	60.2%	29-120	51.2%	32-120	0
LCSD-122315	66.5%	29-120	61.0%	32-120	0
LMW-3-1215	75.8%	29-120	61.5%	32-120	0
EB-1215	51.8%	29-120	55.8%	32-120	0
LMW-5-1215	78.8%	29-120	62.5%	32-120	0
LMW-8-1215	80.5%	29-120	61.8%	32-120	0
LMW-9-1215	59.8%	29-120	42.0%	32-120	0

Prep Method: SW3510C
Log Number Range: 15-24679 to 15-24683

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-122315
LCS/LCSD

Lab Sample ID: LCS-122315
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/23/15

Date Analyzed LCS: 12/31/15 05:06
LCSD: 12/31/15 05:28
Instrument/Analyst LCS: ECD7/JGR
LCSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount LCS: 1000 mL
LCSD: 1000 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	0.033	0.050	66.0%	0.052	0.050	104%	44.7%
Aroclor 1260	0.033	0.050	66.0%	0.038	0.050	76.0%	14.1%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	60.2%	66.5%
Tetrachlorometaxylene	51.2%	61.0%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Matrix: Water

Data Release Authorized: MW
Reported: 12/22/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-121815 15-24679	Method Blank	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 70.1%
ASY3B 15-24679	LMW-3-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 58.2%
ASY3C 15-24680	EB-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 73.8%
ASY3D 15-24681	LMW-5-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 80.2%
ASY3E 15-24682	LMW-8-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 59.4%
ASY3F 15-24683	LMW-9-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 61.2%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Client ID	O-TER	TOT OUT
MB-121815	70.1%	0
LMW-3-1215	58.2%	0
EB-1215	73.8%	0
LMW-5-1215	80.2%	0
LMW-8-1215	59.4%	0
LMW-9-1215	61.2%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-24679 to 15-24683

ANALYTICAL RESOURCES INCORPORATED

TOTAL HCID RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 12/16/15

ARI Job: ASY3
Project: Lands Burg
92310000002.R273

ARI ID	Client ID	Sample Amt	Final Vol	Prep Date
15-24679-121815MB	Method Blank	500 mL	1.00 mL	12/18/15
15-24679-ASY3B	LMW-3-1215	500 mL	1.00 mL	12/18/15
15-24680-ASY3C	EB-1215	500 mL	1.00 mL	12/18/15
15-24681-ASY3D	LMW-5-1215	500 mL	1.00 mL	12/18/15
15-24682-ASY3E	LMW-8-1215	500 mL	1.00 mL	12/18/15
15-24683-ASY3F	LMW-9-1215	500 mL	1.00 mL	12/18/15

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**38,900**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**16,500**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**79**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**1,790**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**10,900**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
DUPLICATE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010C	1,000 U	1,000 U	0.0%	+/- 1,000	L
Antimony	200.8	3 U	3 U	0.0%	+/- 3	L
Arsenic	200.8	3 U	3 U	0.0%	+/- 3	L
Barium	6010C	500 U	500 U	0.0%	+/- 500	L
Beryllium	6010C	2 U	2 U	0.0%	+/- 2	L
Cadmium	6010C	2 U	2 U	0.0%	+/- 2	L
Calcium	6010C	38,900	38,600	0.8%	+/- 20%	
Chromium	6010C	1,000 U	1,000 U	0.0%	+/- 1,000	L
Cobalt	6010C	10 U	10 U	0.0%	+/- 10	L
Copper	6010C	3 U	3 U	0.0%	+/- 3	L
Iron	6010C	200 U	200 U	0.0%	+/- 200	L
Lead	200.8	10 U	10 U	0.0%	+/- 10	L
Magnesium	6010C	16,500	15,900	3.7%	+/- 20%	
Manganese	6010C	80	80	0.0%	+/- 20	L
Nickel	6010C	20 U	20 U	0.0%	+/- 20	L
Potassium	6010C	1,790	1,730	3.4%	+/- 500	L
Selenium	200.8	5 U	5 U	0.0%	+/- 5	L
Silver	6010C	3 U	3 U	0.0%	+/- 3	L
Sodium	6010C	10,900	10,700	1.9%	+/- 20%	
Thallium	200.8	2 U	2 U	0.0%	+/- 2	L
Vanadium	6010C	3 U	3 U	0.0%	+/- 3	L
Zinc	6010C	20 U	20 U	0.0%	+/- 20	L

Reported in µg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

FORM-VI

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
MATRIX SPIKE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010C	1,000 U	2,000	2,000	100%	
Antimony	200.8	3 U	24	25	96.0%	
Arsenic	200.8	3 U	25	25	100%	
Barium	6010C	500 U	2,230	2,000	112%	
Beryllium	6010C	2 U	487	500	97.4%	
Cadmium	6010C	2 U	501	500	100%	
Calcium	6010C	38,900	48,000	10,000	91.0%	
Chromium	6010C	1,000 U	1,000 U	500	NR	N
Cobalt	6010C	10 U	500	500	100%	
Copper	6010C	3 U	502	500	100%	
Iron	6010C	200 U	1,990	2,000	99.5%	
Lead	200.8	10 U	20	20	100%	
Magnesium	6010C	16,500	27,200	10,000	107%	
Manganese	6010C	80	540	500	92.0%	
Nickel	6010C	20 U	520	500	104%	
Potassium	6010C	1,790	11,700	10,000	99.1%	
Selenium	200.8	5 U	78	80	97.5%	
Silver	6010C	3 U	544	500	109%	
Sodium	6010C	10,900	21,000	10,000	101%	
Thallium	200.8	2 U	23	25	92.0%	
Vanadium	6010C	3 U	517	500	103%	
Zinc	6010C	20 U	500	500	100%	

Reported in µg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked
NR-Not Recovered

Percent Recovery Limits: 75-125%

FORM-V

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-70-2	Calcium	1.2	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	7439-95-4	Magnesium	7.0	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7439-96-5	Manganese	0.11	20	20	U
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	7440-09-7	Potassium	15.0	500	500	U
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-23-5	Sodium	4.2	500	500	U
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**90,900**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**280**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**52,000**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**236**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**2,680**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**16,500**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**47,700**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**8,260**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**26,500**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**407**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**1,750**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**10,000**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**82,400**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**1,530**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**46,200**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**171**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**2,560**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**15,900**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: ASY3MB
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/28/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/28/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/28/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/28/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/28/15	7440-70-2	Calcium	1.2	500	500	U
3010A	12/21/15	6010C	12/28/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/28/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/28/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/28/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/28/15	7439-95-4	Magnesium	7.0	1,000	1,000	U
3010A	12/21/15	6010C	12/28/15	7439-96-5	Manganese	0.11	20	20	U
3010A	12/21/15	6010C	12/28/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/28/15	7440-09-7	Potassium	15.0	500	500	U
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/28/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-23-5	Sodium	4.2	500	500	U
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/28/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ASY3LCS
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010C	2000	2000	100%	
Antimony	200.8	24.0	25.0	96.0%	
Arsenic	200.8	24.4	25.0	97.6%	
Barium	6010C	2150	2000	108%	
Beryllium	6010C	488	500	97.6%	
Cadmium	6010C	505	500	101%	
Calcium	6010C	9860	10000	98.6%	
Chromium	6010C	508	500	102%	
Cobalt	6010C	510	500	102%	
Copper	6010C	503	500	101%	
Iron	6010C	1950	2000	97.5%	
Lead	200.8	26.2	25.0	105%	
Magnesium	6010C	10500	10000	105%	
Manganese	6010C	484	500	96.8%	
Nickel	6010C	530	500	106%	
Potassium	6010C	9920	10000	99.2%	
Selenium	200.8	79.4	80.0	99.2%	
Silver	6010C	546	500	109%	
Sodium	6010C	10200	10000	102%	
Thallium	200.8	23.6	25.0	94.4%	
Vanadium	6010C	520	500	104%	
Zinc	6010C	510	500	102%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

FORM-VII

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/16/15
Page 1 of 1

QC Report No: ATA3-Golder Associates
Project: Lands Berg
9231000002.R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-3-1215 ATA3A 15-24732	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
EB-1215 ATA3B 15-24733	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-5-1215 ATA3C 15-24734	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-8-1215 ATA3D 15-24735	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-9-1215 ATA3E 15-24736	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
MB-122315 Method Blank	NA	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
DUPLICATE

Lab Sample ID: ATA3A
LIMS ID: 15-24732
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ATA3-Golder Associates
Project: Lands Berg
9231000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Mercury	7470A	20.0 U	20.0 U	0.0%	+/- 20.0	L

Reported in ng/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
MATRIX SPIKE

Lab Sample ID: ATA3A
LIMS ID: 15-24732
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ATA3-Golder Associates
Project: Lands Berg
9231000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Mercury	7470A	20.0 U	107	100	107%	

Reported in ng/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ATA3LCS
LIMS ID: 15-24736
Matrix: Water
Data Release Authorized:
Reported: 12/28/15

QC Report No: ATA3-Golder Associates
Project: Lands Berg
9231000002.R273
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Mercury	7470A	193	200	96.5%	

Reported in ng/L

N-Control limit not met
Control Limits: 80-120%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 7, 2016

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

Client Project Name: Landsburg Mine
Client Project Number: 923-1000-002.R273
ARI ID: ATB0 and ATA9

Dear Mr. Zimmerman:

Please find enclosed Chain-of-Custody (COC) record, sample receipt documentation, and the final results for the project referenced above. Analytical Resources, Inc. (ARI) accepted three water samples trip blanks in good condition on December 17, 2015. There were no discrepancies between the COC and the sample containers' labels. Per client request, the metals reporting limits were raised to meet client required limits.

The samples were analyzed for VOCs, PCBs, HCID, Pesticides, SVOCs, Total Metals, as requested on the COC. Quality control analyses are included for your review.

The VOCs CCALs are out of control low for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The VOCs method blanks contained contamination at "J" qualified values. All associated samples and QC that contain analyte have been flagged with a "B" qualifier.

The VOCs LCS and/or LCSD are out of control low for several analytes.

The SVOCs CCALs are out of control high for all associated FORM III "Q" flagged analytes with the exception of 2,2--oxybis(1-Chloropropane), 4-Chloroaniline, 4-Nitrophenol and N-nitroso-di-n-propylamine which are out of control low. All associated samples that contain analyte have been flagged with a "Q" qualifier.

The SVOCs method blank contained bis(2-Ethylhexyl)phthalete. All associated QC that contain analyte have been flagged with a "B" qualifier.

The HCID surrogate o-Terphenyl is out of control low in the associated sample LMW-10-1215. The sample has been historically clean and was not re-extracted due to low surrogate recovery.

The PCBs LCS/LCSD sample duplicate RPD is outside of control limits.

No other analytical complications were noted.

An electronic copy of this report and all supporting raw data will remain on file at ARI. Please feel free to contact me if you have any questions or require any additional information.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Respectfully,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: A1A9	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G. Zimmerman, J Lamberts	
Client Project Name: Landsburg	
Client Project #: 923100002 R273	Samplers: JMiller / JLamberts

Page: 1 of 1	
Date: 12/17/15	Ice Present?
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)

Sample ID	Date	Time	Matrix	No. Containers	VOC Client List	PCB(LL) Pesticides	SVOC-8270 Client List	TPH-AK/D	TAML Total Metals	TAML Dissolved * Metals			Notes/Comments
Trip Blank	12/17/15	—	w	6	X								* Field Filtered (Please Analyze under Existing MSA between Golder & ARI)
LMW-10-1215		0930	w	17	X	X	X	X	X	Hold			
LMW-2-1215		1040	w	17	X	X	X	X	X				
LMW-4-1215		1200	w	17	X	X	X	X	X				
		end of sampling											

Comments/Special Instructions – Ecology EIM EDD * client specific RLs + Analyte list Please CC JLamberts + GZimmerman@golder.com	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: J. Lamberts	Printed Name: Chris Atwell	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 12/17/15 1257	Date & Time: 12/17/15 1257	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, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Golder

Project Name: Landsburg

COC No(s): ~~NA~~

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

Assigned ARI Job No: ATA9 | ATBQ

Tracking No: _____ ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to 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): 3.3 4.7 3.8

Time: _____

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

Temp Gun ID#: D00527G

Cooler Accepted by: CA Date: 12/17/15 Time: 1257

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	~~YES~~	NO
Were all bottles sealed in individual plastic bags?		YES	~~NO~~
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~~		

Was Sample Split by ARI : ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: CA Date: 12/18/15 Time: 1100

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	• • •

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

PRESERVATION VERIFICATION 12/18/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ATB0**

Inquiry Number: NONE
Analysis Requested: 12/17/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-119
Validatable Package: Lv4
Deliverables:

PC: Kelly
VTSR: 12/17/15

Project #: 9231000002 R273
Project: Landsburg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24761 **ATB0A**	LMW-10-1215						TOT Pass															
15-24762 **ATB0B**	LMW-2-1215						TOT															
15-24763 **ATB0C**	LMW-4-1215						TOT															

ATB0 09999

Checked By CA Date 12/19/15

PRESERVATION VERIFICATION 12/18/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **ATA9**

Inquiry Number: NONE
Analysis Requested: 12/18/15
Contact: Zimmerman, Gary
Client: Golder Associates
Logged by: CA
Sample Set Used: Yes-119
Validatable Package: Lv4
Deliverables:

PC: Kelly
VTSR: 12/18/15

Project #: 9231000002 R273
Project: Landsburg
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-24743 **ATA9B**	LMW-10-1215						TOT pass															
15-24744 **ATA9C**	LMW-2-1215						TOT pass															
15-24745 **ATA9D**	LMW-4-1215						TOT pass															

ATA9 SDGS

Checked By CA Date 12/18/15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ATA9
Client: Golder Associates
Project Event: 9231000002 R273
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	Trip Blank	ATA9A	15-24742	Water	12/17/15	12/18/15 12:57
2.	LMW-10-1215	ATA9B	15-24743	Water	12/17/15 09:30	12/18/15 12:57
3.	LMW-2-1215	ATA9C	15-24744	Water	12/17/15 10:40	12/18/15 12:57
4.	LMW-4-1215	ATA9D	15-24745	Water	12/17/15 12:00	12/18/15 12:57

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: ATB0
Client: Golder Associates
Project Event: 9231000002 R273
Project Name: Landsburg

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	LMW-10-1215	ATB0A	15-24761	Water	12/17/15 09:30	12/17/15 12:57
2.	LMW-2-1215	ATB0B	15-24762	Water	12/17/15 10:40	12/17/15 12:57
3.	LMW-4-1215	ATB0C	15-24763	Water	12/17/15 12:00	12/17/15 12:57

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
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).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

Analytical Method Information

Printed: 01/14/2016 9:32 am

8260C VOA in Water (EPA 8260C)

Preservation: pH<2; HCL, Cool <6°C

Container: VOA Vial, Clear, 40 mL, HCL

Amount Required: 120 mL

Hold Time: 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chloromethane	0.0948	0.500 ug/L		30	59-134	30	59-134	30
Vinyl Chloride	0.0572	0.200 ug/L		30	70-130	30	70-130	30
Bromomethane	0.252	1.00 ug/L		30	52-142	30	52-142	30
Chloroethane	0.0861	0.200 ug/L		30	47-172	30	47-172	30
Trichlorofluoromethane	0.0375	0.200 ug/L		30	70-138	30	70-138	30
Acrolein	2.48	5.00 ug/L		30	45-144	30	45-144	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0429	0.200 ug/L		30	73-125	30	73-125	30
Acetone	2.06	5.00 ug/L		30	46-157	30	46-157	30
1,1-Dichloroethene	0.0540	0.200 ug/L		30	76-123	30	76-123	30
Bromoethane	0.0412	0.200 ug/L		30	72-125	30	72-125	30
Iodomethane	0.227	1.00 ug/L		30	46-143	30	46-143	30
Methylene Chloride	0.485	1.00 ug/L		30	68-129	30	68-129	30
Acrylonitrile	0.604	1.00 ug/L		30	65-124	30	65-124	30
Carbon Disulfide	0.0370	0.200 ug/L		30	69-129	30	69-129	30
trans-1,2-Dichloroethene	0.0485	0.200 ug/L		30	72-124	30	72-124	30
Vinyl Acetate	0.0688	0.200 ug/L		30	62-133	30	62-133	30
1,1-Dichloroethane	0.0533	0.200 ug/L		30	77-122	30	77-122	30
2-Butanone	0.814	5.00 ug/L		30	67-134	30	67-134	30
2,2-Dichloropropane	0.0518	0.200 ug/L		30	71-134	30	71-134	30
cis-1,2-Dichloroethene	0.0427	0.200 ug/L		30	79-120	30	79-120	30
Chloroform	0.0273	0.200 ug/L		30	77-123	30	77-123	30
Bromochloromethane	0.0607	0.200 ug/L		30	77-120	30	77-120	30
1,1,1-Trichloroethane	0.0408	0.200 ug/L		30	78-124	30	78-124	30
1,1-Dichloropropene	0.0340	0.200 ug/L		30	78-120	30	78-120	30
Carbon tetrachloride	0.0439	0.200 ug/L		30	69-129	30	69-139	30
1,2-Dichloroethane	0.0717	0.200 ug/L		30	71-125	30	71-125	30
Benzene	0.0266	0.200 ug/L		30	80-120	30	80-120	30
Trichloroethene	0.0489	0.200 ug/L		30	80-120	30	80-120	30
1,2-Dichloropropane	0.0352	0.200 ug/L		30	79-120	30	79-120	30
Bromodichloromethane	0.0506	0.200 ug/L		30	78-120	30	78-120	30
Dibromomethane	0.145	0.200 ug/L		30	77-120	30	77-120	30
2-Chloroethyl vinyl ether	0.250	1.00 ug/L		30	67-125	30	67-125	30
4-Methyl-2-Pentanone	0.974	5.00 ug/L		30	72-132	30	72-132	30
cis-1,3-Dichloropropene	0.0610	0.200 ug/L		30	79-124	30	79-124	30
Toluene	0.0399	0.200 ug/L		30	80-120	30	80-120	30
trans-1,3-Dichloropropene	0.0815	0.200 ug/L		30	77-126	30	77-126	30
2-Hexanone	0.902	5.00 ug/L		30	70-135	30	70-135	30
1,1,2-Trichloroethane	0.129	0.200 ug/L		30	77-120	30	77-120	30
1,3-Dichloropropane	0.0622	0.200 ug/L		30	80-120	30	80-120	30
Tetrachloroethene	0.0474	0.200 ug/L		30	80-120	30	80-120	30
Dibromochloromethane	0.0481	0.200 ug/L		30	74-121	30	74-121	30
1,2-Dibromoethane	0.0745	0.200 ug/L		30	79-120	30	79-120	30
Chlorobenzene	0.0230	0.200 ug/L		30	80-120	30	80-120	30
Ethylbenzene	0.0371	0.200 ug/L		30	78-122	30	78-122	30
1,1,1,2-Tetrachloroethane	0.0396	0.200 ug/L		30	76-123	30	76-123	30
m,p-Xylene	0.0522	0.400 ug/L		30	78-126	30	78-126	30
o-Xylene	0.0349	0.200 ug/L		30	76-127	30	76-127	30
Xylenes, total	0.0871	0.600 ug/L		30	76-127	30	76-127	30
Styrene	0.0454	0.200 ug/L		30	79-129	30	79-129	30
Bromoform	0.0618	0.200 ug/L		30	57-131	30	57-131	30
1,1,2,2-Tetrachloroethane	0.0598	0.200 ug/L		30	73-120	30	73-120	30
1,2,3-Trichloropropane	0.131	0.500 ug/L		30	69-127	30	69-127	30
trans-1,4-Dichloro 2-Butene	0.324	1.00 ug/L		30	49-144	30	49-144	30
n-Propylbenzene	0.0235	0.200 ug/L		30	73-130	30	73-130	30

ATAS : 00012

Analytical Method Information

(Continued)

Printed: 01/14/2016 9:32 am

8260C VOA in Water (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Bromobenzene	0.0605	0.200 ug/L		30	79-120	30	79-120	30
Isopropyl Benzene	0.0212	0.200 ug/L		30	78-129	30	79-129	30
2-Chlorotoluene	0.0236	0.200 ug/L		30	80-121	30	80-121	30
4-Chlorotoluene	0.0159	0.200 ug/L		30	78-122	30	78-122	30
t-Butylbenzene	0.0256	0.200 ug/L		30	73-129	30	73-129	30
1,3,5-Trimethylbenzene	0.0150	0.200 ug/L		30	77-128	30	77-128	30
1,2,4-Trimethylbenzene	0.0243	0.200 ug/L		30	76-129	30	76-129	30
s-Butylbenzene	0.0237	0.200 ug/L		30	75-128	30	75-128	30
4-Isopropyl Toluene	0.0263	0.200 ug/L		30	74-131	30	74-121	30
1,3-Dichlorobenzene	0.0362	0.200 ug/L		30	79-120	30	79-120	30
1,4-Dichlorobenzene	0.0397	0.200 ug/L		30	77-120	30	77-120	30
n-Butylbenzene	0.0248	0.200 ug/L		30	73-130	30	73-130	30
1,2-Dichlorobenzene	0.0365	0.200 ug/L		30	78-120	30	78-120	30
1,2-Dibromo-3-chloropropane	0.366	0.500 ug/L		30	60-124	30	60-124	30
1,2,4-Trichlorobenzene	0.107	0.500 ug/L		30	54-131	30	54-131	30
Hexachloro-1,3-Butadiene	0.0734	0.500 ug/L		30	55-132	30	55-132	30
Naphthalene	0.118	0.500 ug/L		30	50-135	30	50-135	30
1,2,3-Trichlorobenzene	0.110	0.500 ug/L		30	45-137	30	45-137	30
Dichlorodifluoromethane	0.0521	0.200 ug/L		30	41-159	30	41-159	30
Methyl tert-butyl Ether	0.0729	0.500 ug/L		30	74-127	30	74-127	30
n-Hexane	0.100	0.200 ug/L		30	70-130	30	70-130	30
2-Pentanone	5.00	5.00 ug/L		30	64-184	30	64-184	30
Surr: Dibromofluoromethane			80-120					
Surr: 1,2-Dichloroethane-d4			80-129					
Surr: Toluene-d8			80-120					
Surr: 4-Bromofluorobenzene			80-120					
Surr: 1,2-Dichlorobenzene-d4			80-120					
Pentafluorobenzene								
Chlorobenzene-d5								
1,4-Difluorobenzene								
1,4-Dichlorobenzene-d4								

Analytical Method Information

Printed: 01/14/2016 9:32 am

TPH_NW HCID in Water (NWTPH-HCID)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Gasoline Range Organics (Tol-C12)		0.250 mg/L						
Diesel Range Organics (C12-C24)	0.0300	0.500 mg/L						
Motor Oil Range Organics (C24-C38)	0.0600	1.00 mg/L						
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

Analytical Method Information

Printed: 01/14/2016 9:33 am

8270D SVOC (LiqLiq) in Water (EPA 8270D)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Phenol	0.271	1.00 ug/L		30	48-120	30	48-120	30
bis(2-chloroethyl) ether	0.248	1.00 ug/L		30	50-120	30	50-120	30
2-Chlorophenol	0.220	1.00 ug/L		30	48-120	30	48-120	30
1,3-Dichlorobenzene	0.266	1.00 ug/L		30	24-120	30	24-120	30
1,4-Dichlorobenzene	0.267	1.00 ug/L		30	24-120	30	24-120	30
1,2-Dichlorobenzene	0.250	1.00 ug/L		30	28-120	30	28-120	30
Benzyl alcohol	0.552	2.00 ug/L		30	26-120	30	26-120	30
2,2'-Oxybis(1-chloropropane)	0.241	1.00 ug/L		30	47-120	30	47-120	30
2-Methylphenol	0.211	1.00 ug/L		30	44-120	30	44-120	30
Hexachloroethane	0.300	2.00 ug/L		30	18-120	30	18-120	30
N-Nitroso-di-n-Propylamine	0.269	1.00 ug/L		30	50-120	30	50-120	30
4-Methylphenol	0.468	2.00 ug/L		30	48-120	30	48-120	30
Nitrobenzene	0.253	1.00 ug/L		30	49-120	30	49-120	30
Isophorone	0.423	1.00 ug/L		30	57-120	30	57-120	30
2-Nitrophenol	0.263	3.00 ug/L		30	47-120	30	47-120	30
2,4-Dimethylphenol	1.12	3.00 ug/L		30	37-120	30	37-120	30
Bis(2-Chloroethoxy)methane	0.237	1.00 ug/L		30	48-120	30	48-120	30
2,4-Dichlorophenol	1.11	3.00 ug/L		30	54-120	30	54-120	30
1,2,4-Trichlorobenzene	0.254	1.00 ug/L		30	28-120	30	28-120	30
Naphthalene	0.246	1.00 ug/L		30	34-120	30	34-120	30
Benzoic acid	3.92	20.0 ug/L		30	37-120	30	37-120	30
4-Chloroaniline	1.73	5.00 ug/L		30	10-132	30	10-132	30
2,6-Dinitrotoluene	1.14	3.00 ug/L		30	52-120	30	52-120	30
Hexachlorobutadiene	0.335	3.00 ug/L		30	18-120	30	18-120	30
4-Chloro-3-Methylphenol	1.12	3.00 ug/L		30	59-120	30	59-120	30
Hexachlorocyclopentadiene	1.08	5.00 ug/L		30	16-120	30	16-120	30
2,4,6-Trichlorophenol	1.04	3.00 ug/L		30	53-120	30	53-120	30
2,4,5-Trichlorophenol	1.10	5.00 ug/L		30	58-120	30	58-120	30
2-Chloronaphthalene	0.248	1.00 ug/L		30	42-120	30	42-120	30
2-Nitroaniline	1.46	3.00 ug/L		30	31-120	30	31-120	30
Acenaphthylene	0.268	1.00 ug/L		30	46-120	30	46-120	30
Dimethylphthalate	0.259	1.00 ug/L		30	61-120	30	61-120	30
Acenaphthene	0.254	1.00 ug/L		30	43-120	30	43-120	30
3-Nitroaniline	1.53	3.00 ug/L		30	36-120	30	36-120	30
2-Methylnaphthalene	0.295	1.00 ug/L		30	27-120	30	27-120	30
2,4-Dinitrophenol	3.35	20.0 ug/L		30	40-120	30	40-120	30
Dibenzofuran	0.309	1.00 ug/L		30	36-120	30	36-120	30
4-Nitrophenol	1.75	10.0 ug/L		30	44-129	30	44-129	30
2,4-Dinitrotoluene	1.12	3.00 ug/L		30	51-120	30	51-120	30
Fluorene	0.291	1.00 ug/L		30	42-120	30	42-120	30
4-Chlorophenylphenyl ether	0.267	1.00 ug/L		30	54-120	30	54-120	30
Diethyl phthalate	0.273	1.00 ug/L		30	60-120	30	60-120	30
4-Nitroaniline	2.02	3.00 ug/L		30	25-132	30	25-132	30
4,6-Dinitro-2-methylphenol	3.61	10.0 ug/L		30	56-120	30	56-120	30
N-Nitrosodiphenylamine	0.299	1.00 ug/L		30	48-120	30	48-120	30
4-Bromophenyl phenyl ether	0.238	1.00 ug/L		30	56-120	30	56-120	30
Hexachlorobenzene	0.280	1.00 ug/L		30	54-120	30	54-120	30
Pentachlorophenol	1.89	10.0 ug/L		30	40-131	30	40-131	30
Phenanthrene	0.318	1.00 ug/L		30	53-120	30	53-120	30
Anthracene	0.265	1.00 ug/L		30	47-120	30	47-120	30
Carbazole	0.310	1.00 ug/L		30	57-120	30	57-120	30
Di-n-butylphthalate	0.291	1.00 ug/L		30	65-120	30	65-120	30
Fluoranthene	0.297	1.00 ug/L		30	53-120	30	53-120	30
Pyrene	0.284	1.00 ug/L		30	47-120	30	47-120	30

Analytical Method Information

(Continued)

Printed: 01/14/2016 9:33 am

8270D SVOC (LiqLiq) in Water (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Butylbenzylphthalate	0.299	1.00 ug/L		30	54-120	30	54-120	30
Benzo(a)anthracene	0.287	1.00 ug/L		30	51-120	30	51-120	30
3,3'-Dichlorobenzidine	1.77	5.00 ug/L		30	44-120	30	44-120	30
Chrysene	0.321	1.00 ug/L		30	48-120	30	48-120	30
bis(2-Ethylhexyl)phthalate	2.14	3.00 ug/L		30	58-120	30	58-120	30
Di-n-Octylphthalate	0.268	1.00 ug/L		30	62-120	30	62-120	30
Benzo(b)fluoranthene	0.317	1.00 ug/L		30	49-120	30	49-120	30
Benzo(k)fluoranthene	0.335	1.00 ug/L		30	47-120	30	47-120	30
Benzo(a)pyrene	0.297	1.00 ug/L		30	45-120	30	45-120	30
Indeno(1,2,3-cd)pyrene	0.359	1.00 ug/L		30	41-120	30	41-120	30
Dibenzo(a,h)anthracene	0.394	1.00 ug/L		30	35-120	30	35-120	30
Benzo(g,h,i)perylene	0.391	1.00 ug/L		30	35-120	30	35-120	30
N-Nitrosodimethylamine	1.33	3.00 ug/L		30	41-120	30	41-120	30
Aniline	0.973	1.00 ug/L		30	21-120	30	21-120	30
1-Methylnaphthalene	0.258	1.00 ug/L		30	55-120	30	55-120	30
Azobenzene (1,2-DP-Hydrazine)	0.228	1.00 ug/L		30	55-120	30	55-120	30
Retene	4.01	20.0 ug/L		30		30		30
Pyridine	86.6	100 ug/L		30	10-147	30	10-147	30
Benzofluoranthenes, Total	0.801	2.00 ug/L		30	30-160	30	30-160	30
2,3,4,6-Tetrachlorophenol	0.244	1.00 ug/L		30	30-160	30	30-160	30
Benzidine		10.0 ug/L		30	57-120	30	57-120	30
Tetrachloroguaiacol				30		30		30
1,2,4,5-Tetrachlorobenzene	0.381	1.00 ug/L		30		30		30
1,4-Dioxane	0.506	2.00 ug/L		40	40-120	40		40
3,4,5-Trichloroguaiacol	0.470	1.00 ug/L		30		30		30
3,4,6-Trichloroguaiacol		1.00 ug/L		30		30		30
4,5,6-Trichloroguaiacol	0.476	1.00 ug/L		30		30		30
Guaiacol	0.585	1.00 ug/L		30		30		30
alpha-Terpineol	0.420	1.00 ug/L						
Perylene								
2,6-Dichlorophenol								
Diphenyl ether								
N-Nitrosomethylethylamine								
Surr: 2-Fluorophenol			33-120					
Surr: Phenol-d5			38-120					
Surr: 2-Chlorophenol-d4			41-120					
Surr: 1,2-Dichlorobenzene-d4			20-120					
Surr: Nitrobenzene-d5			27-120					
Surr: 2-Fluorobiphenyl			33-120					
Surr: 2,4,6-Tribromophenol			52-120					
Surr: p-Terphenyl-d14			28-120					
Surr: 1,4-Dioxane-d8			39-120					
1,4-Dichlorobenzene-d4								
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Di-n-Octylphthalate-d4								
Perylene-d12								

Analytical Method Information

Printed: 01/14/2016 9:34 am

8081B Pest in Water (EPA 8081B)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
alpha-BHC	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane)	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC	0.00870	0.0500 ug/L		30	45-145	30	15-145	30
Heptachlor	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane)	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane)	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene	0.0123	0.100 ug/L		30	20-120	30	20-120	30
Hexachlorobenzene	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE	0.0344	0.100 ug/L		30				
2,4'-DDD	0.0121	0.100 ug/L		30				
2,4'-DDT	0.00920	0.100 ug/L		30				
Oxychlordane	0.0356	0.100 ug/L		30				
cis-Nonachlor	0.00950	0.100 ug/L		30				
trans-Nonachlor	0.00860	0.100 ug/L		30				
Mirex	0.0104	0.100 ug/L		30				
Hexachloroethane	0.00940	0.0500 ug/L		30				
Toxaphene	1.25	5.00 ug/L						
Chlordane, technical		1.00 ug/L						
alpha-BHC [2C]	0.00850	0.0500 ug/L		30	57-120	30	57-120	30
beta-BHC [2C]	0.00980	0.0500 ug/L		30	59-120	30	59-120	30
gamma-BHC (Lindane) [2C]	0.0159	0.0500 ug/L		30	62-120	30	62-120	30
delta-BHC [2C]	0.00870	0.0500 ug/L		30	15-145	30	15-145	30
Heptachlor [2C]	0.0113	0.0500 ug/L		30	54-120	30	54-120	30
Aldrin [2C]	0.0103	0.0500 ug/L		30	47-120	30	47-120	30
Heptachlor Epoxide [2C]	0.00790	0.0500 ug/L		30	63-120	30	63-120	30
trans-Chlordane (beta-Chlordane) [2C]	0.00820	0.0500 ug/L		30	63-120	30	63-120	30
cis-Chlordane (alpha-chlordane) [2C]	0.00820	0.0500 ug/L		30	60-120	30	60-120	30
Endosulfan I [2C]	0.00890	0.0500 ug/L		30	58-121	30	58-121	30
4,4'-DDE [2C]	0.0184	0.100 ug/L		30	69-128	30	69-128	30
Dieldrin [2C]	0.0168	0.100 ug/L		30	62-120	30	62-120	30
Endrin [2C]	0.0167	0.100 ug/L		30	64-120	30	64-120	30
Endosulfan II [2C]	0.0139	0.100 ug/L		30	64-120	30	64-120	30
4,4'-DDD [2C]	0.0186	0.100 ug/L		30	63-120	30	63-120	30
Endrin Aldehyde [2C]	0.0163	0.100 ug/L		30	41-120	30	41-120	30
4,4'-DDT [2C]	0.0169	0.100 ug/L		30	57-124	30	57-124	30
Endosulfan Sulfate [2C]	0.0235	0.100 ug/L		30	47-120	30	47-120	30
Endrin Ketone [2C]	0.0151	0.100 ug/L		30	58-120	30	58-120	30
Methoxychlor [2C]	0.0744	0.500 ug/L		30	56-120	30	56-120	30
Hexachlorobutadiene [2C]	0.0123	0.100 ug/L		30	20-120	30	20-120	30

Analytical Method Information

(Continued)

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8081B Pest in Water (EPA 8081B) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Hexachlorobenzene [2C]	0.0101	0.100 ug/L		30	41-120	30	41-120	30
2,4'-DDE [2C]	0.0344	0.100 ug/L		30				
2,4'-DDD [2C]	0.0121	0.100 ug/L		30				
2,4'-DDT [2C]	0.00920	0.100 ug/L		30				
Oxychlordane [2C]	0.0356	0.100 ug/L		30				
cis-Nonachlor [2C]	0.00950	0.100 ug/L		30				
trans-Nonachlor [2C]	0.00860	0.100 ug/L		30				
Mirex [2C]	0.0104	0.100 ug/L		30				
Hexachloroethane [2C]	0.00940	0.0500 ug/L		30				
Toxaphene [2C]	1.25	5.00 ug/L						
Chlordane, technical [2C]		1.00 ug/L						
Surr: Decachlorobiphenyl			11-144	30				
Surr: Tetrachlorometaxylene			30-120					
Surr: Decachlorobiphenyl [2C]			11-144	30				
Surr: Tetrachlorometaxylene [2C]			30-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 01/14/2016 9:34 am

8082A PCB Water 0.01 in Water (EPA 8082A)

Preservation: Cool <6°C

Container: Glass NM, Amber, 1000 mL **Amount Required:** 2000 mL **Hold Time:** 365 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1)				30	54-120	30	54-120	30
Aroclor-1016 (2)				30	54-120	30	54-120	30
Aroclor-1016 (3)				30	54-120	30	54-120	30
Aroclor-1016 (4)				30	54-120	30	54-120	30
Aroclor 1016 [2C]	0.00248	0.0100 ug/L		30	54-120	30	54-120	30
Aroclor-1016 (1) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (2) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (3) [2C]				30	54-120	30	54-120	30
Aroclor-1016 (4) [2C]				30	54-120	30	54-120	30
Aroclor 1221	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

Analytical Method Information

(Continued)

Printed: 01/14/2016 9:34 am

8082A PCB Water 0.01 in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	0.00248	0.0100 ug/L		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1)				30	51-128	30	51-128	30
Aroclor-1260 (2)				30	51-128	30	51-128	30
Aroclor-1260 (3)				30	51-128	30	51-128	30
Aroclor-1260 (4)				30	51-128	30	51-128	30
Aroclor-1260 (5)				30	51-128	30	51-128	30
Aroclor 1260 [2C]	0.00276	0.0100 ug/L		30	51-128	30	51-128	30
Aroclor-1260 (1) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (2) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (3) [2C]				30	51-128	30	51-128	30
Aroclor-1260 (4) [2C]				30	51-128	30	51-128	30
Aroclor 1262	0.00276	0.0100 ug/L		30				
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.00276	0.0100 ug/L		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			29-120					
Surr: Tetrachlorometaxylene			32-120					
Surr: Decachlorobiphenyl [2C]			29-120					
Surr: Tetrachlorometaxylene [2C]			32-120					
Surr: DCB			29-120					
Surr: TCX			32-120					
Surr: DCB [2C]			29-120					
Surr: TCX [2C]			32-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

(Continued)

Printed: 05/07/2015 8:05 am

Met 6010C in Water (EPA 6010C)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum	0.00757	0.0500 mg/L		20	75-125	20	80-120	20
Antimony	0.00628	0.0500 mg/L		20	75-125	20	80-120	20
Arsenic	0.00333	0.0500 mg/L		20	75-125	20	80-120	20
Barium	0.00133	0.00300 mg/L		20	75-125	20	80-120	20
Beryllium	0.000160	0.00100 mg/L		20	75-125	20	80-120	20
Boron	0.00739	0.0200 mg/L		20	75-125	20	80-120	20
Cadmium	0.000180	0.00200 mg/L		20	75-125	20	80-120	20
Calcium	0.0113	0.0500 mg/L		20	75-125	20	80-120	20
Chromium	0.00124	0.00500 mg/L		20	75-125	20	80-120	20
Cobalt	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Copper	0.000920	0.00200 mg/L		20	75-125	20	80-120	20
Iron	0.00750	0.0500 mg/L		20	75-125	20	80-120	20
Lead	0.00155	0.0200 mg/L		20	75-125	20	80-120	20
Magnesium	0.00961	0.0500 mg/L		20	75-125	20	80-120	20
Manganese	0.000280	0.00100 mg/L		20	75-125	20	80-120	20
Molybdenum	0.000790	0.00500 mg/L		20	75-125	20	80-120	20
Nickel	0.00386	0.0100 mg/L		20	75-125	20	80-120	20
Potassium	0.0657	0.500 mg/L		20	75-125	20	80-120	20
Selenium	0.00499	0.0500 mg/L		20	75-125	20	80-120	20
Silicon	0.00817	0.0600 mg/L		20	75-125	20	80-120	20
Silver	0.000430	0.00300 mg/L		20	75-125	20	80-120	20
Sodium	0.0114	0.500 mg/L		20	75-125	20	80-120	20
Sodium-1	0.0114	50.0 mg/L		20	75-125	20	80-120	20
Strontium	0.0000900	0.00100 mg/L		20	75-125	20	80-120	20
Thallium	0.00310	0.0500 mg/L		20	75-125	20	80-120	20
Tin	0.00141	0.0100 mg/L		20	75-125	20	80-120	20
Titanium	0.00211	0.00500 mg/L		20	75-125	20	80-120	20
Vanadium	0.000270	0.00300 mg/L		20	75-125	20	80-120	20
Zinc	0.00145	0.0100 mg/L		20	75-125	20	80-120	20

Analytical Method Information

Analyte	DL	LOQ	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
Met 200.8 (EPA 200.8) in Water								
Preservation: pH<2; HNO3, Cool <6°C								
Container: HDPE NM, 500 mL, 1:1 HNO3			**Minimum Sample Volume:** 500 mL			**Hold Time:** 180 days		
Aluminum-27	0.00160	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-121	0.0000100	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Antimony-123	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75a	0.0000480	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Arsenic-75b	0.0000920	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-135	0.0000200	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Barium-137	0.0000190	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Beryllium-9	0.0000210	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-111	0.0000100	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Cadmium-114	0.00000500	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Calcium-43	0.00398	0.0500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-52	0.0000450	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Chromium-53	0.000118	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Cobalt-59	0.0000110	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Copper-63	0.000158	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Copper-65	0.000236	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Iron-54	0.00575	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Iron-57	0.00388	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Lead-208	0.0000460	0.000100 mg/L		20	75 - 125	20	80 - 120	20
Magnesium-24	0.000297	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Manganese-55	0.0000220	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Molybdenum-98	0.0000130	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Nickel-60	0.0000790	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Nickel-62	0.0000890	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Potassium-39	0.00294	0.0200 mg/L		20	75 - 125	20	80 - 120	20
Selenium-82	0.000127	0.000500 mg/L		20	75 - 125	20	80 - 120	20
Selenium-78	0.000324	0.00200 mg/L		20	75 - 125	20	80 - 120	20
Silver-107	0.00000800	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Sodium-23	0.00283	0.100 mg/L		20	75 - 125	20	80 - 120	20
Thallium-205	0.00000400	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51a	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Vanadium-51b	0.0000430	0.000200 mg/L		20	75 - 125	20	80 - 120	20
Zinc-66	0.000497	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-67	0.000531	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Zinc-68	0.000524	0.00400 mg/L		20	75 - 125	20	80 - 120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

Analytical Method Information

Printed: 01/14/2016 9:36 am

Met 7470A Hg Low Level in Water (EPA 7470A)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00000260	0.0000200 mg/L		20	75-125	20	80-120	20

ATAS : 00023

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:01

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.16 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Date Analyzed: 12/23/15 18:01

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	99.9%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:22

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.19 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Date Analyzed: 12/23/15 18:22

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	102%
Bromofluorobenzene	99.2%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:43

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.39 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Date Analyzed: 12/23/15 18:43

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	102%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: MB-122315A
METHOD BLANK

Lab Sample ID: MB-122315A
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 13:25

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	**Carbon Disulfide**	**0.04**	**0.20**	**0.10 J**
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	**Tetrachloroethene**	**0.05**	**0.20**	**0.05 J**
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	**1,3-Dichlorobenzene**	**0.04**	**0.20**	**0.04 J**
106-46-7	**1,4-Dichlorobenzene**	**0.04**	**0.20**	**0.05 J**
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: MB-122315A
METHOD BLANK

Lab Sample ID: MB-122315A
LIMS ID: 15-24743
Matrix: Water
Date Analyzed: 12/23/15 13:25

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	**1,3,5-Trimethylbenzene**	**0.02**	**0.20**	**0.02 J**
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	**n-Propylbenzene**	**0.02**	**0.20**	**0.03 J**
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	**tert-Butylbenzene**	**0.03**	**0.20**	**0.03 J**
135-98-8	**sec-Butylbenzene**	**0.02**	**0.20**	**0.03 J**
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	**n-Butylbenzene**	**0.02**	**0.20**	**0.05 J**
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	99.4%
Bromofluorobenzene	99.7%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: ATA9A
LIMS ID: 15-24742
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:08

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.14 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	**Acetone**	**2.1**	**5.0**	**4.6 J**
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	**Styrene**	**0.05**	**0.20**	**0.06 J**
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.10 J**
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: ATA9A
LIMS ID: 15-24742
Matrix: Water
Date Analyzed: 12/23/15 14:08

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.9%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LCS-122315A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-122315A
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 12/23/15 12:43
LCSD: 12/23/15 13:04

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.50	10.0	95.0%	10.1	10.0	101%	6.1%
Bromomethane	8.78	10.0	87.8%	9.30	10.0	93.0%	5.8%
Vinyl Chloride	9.96	10.0	99.6%	10.8	10.0	108%	8.1%
Chloroethane	9.64	10.0	96.4%	11.2	10.0	112%	15.0%
Methylene Chloride	9.02	10.0	90.2%	9.52	10.0	95.2%	5.4%
Acetone	41.9	50.0	83.8%	49.9	50.0	99.8%	17.4%
Carbon Disulfide	9.58 B	10.0	95.8%	10.1 B	10.0	101%	5.3%
1,1-Dichloroethene	9.40	10.0	94.0%	10.1	10.0	101%	7.2%
1,1-Dichloroethane	9.50	10.0	95.0%	10.2	10.0	102%	7.1%
trans-1,2-Dichloroethene	9.39	10.0	93.9%	9.99	10.0	99.9%	6.2%
cis-1,2-Dichloroethene	9.56	10.0	95.6%	10.0	10.0	100%	4.5%
Chloroform	9.49	10.0	94.9%	10.2	10.0	102%	7.2%
1,2-Dichloroethane	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
2-Butanone	42.9	50.0	85.8%	51.3	50.0	103%	17.8%
1,1,1-Trichloroethane	9.38	10.0	93.8%	10.3	10.0	103%	9.3%
Carbon Tetrachloride	6.41 Q	10.0	64.1%	6.86 Q	10.0	68.6%	6.8%
Vinyl Acetate	7.81	10.0	78.1%	9.26	10.0	92.6%	17.0%
Bromodichloromethane	9.36	10.0	93.6%	10.3	10.0	103%	9.6%
1,2-Dichloropropane	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
cis-1,3-Dichloropropene	9.70	10.0	97.0%	10.6	10.0	106%	8.9%
Trichloroethene	9.47	10.0	94.7%	10.2	10.0	102%	7.4%
Dibromochloromethane	6.75 Q	10.0	67.5%	7.60 Q	10.0	76.0%	11.8%
1,1,2-Trichloroethane	9.37	10.0	93.7%	10.6	10.0	106%	12.3%
Benzene	9.69	10.0	96.9%	10.5	10.0	105%	8.0%
trans-1,3-Dichloropropene	7.47	10.0	74.7%	8.32	10.0	83.2%	10.8%
2-Chloroethylvinylether	9.39	10.0	93.9%	10.8	10.0	108%	14.0%
Bromoform	5.95 Q	10.0	59.5%	6.98 Q	10.0	69.8%	15.9%
4-Methyl-2-Pentanone (MIBK)	44.0	50.0	88.0%	53.4	50.0	107%	19.3%
2-Hexanone	41.5	50.0	83.0%	51.9	50.0	104%	22.3%
Tetrachloroethene	8.89 B	10.0	88.9%	9.43 B	10.0	94.3%	5.9%
1,1,2,2-Tetrachloroethane	9.11	10.0	91.1%	10.6	10.0	106%	15.1%
Toluene	9.48	10.0	94.8%	10.3	10.0	103%	8.3%
Chlorobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
Ethylbenzene	9.43	10.0	94.3%	10.4	10.0	104%	9.8%
Styrene	10.0	10.0	100%	10.9	10.0	109%	8.6%
Trichlorofluoromethane	9.86	10.0	98.6%	11.0	10.0	110%	10.9%
1,1,2-Trichloro-1,2,2-trifluoroetha	9.66	10.0	96.6%	10.1	10.0	101%	4.5%
m,p-Xylene	19.2	20.0	96.0%	20.9	20.0	104%	8.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LCS-122315A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-122315A
LIMS ID: 15-24743
Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.90	10.0	99.0%	10.7	10.0	107%	7.8%
1,2-Dichlorobenzene	9.21	10.0	92.1%	10.2	10.0	102%	10.2%
1,3-Dichlorobenzene	9.44 B	10.0	94.4%	10.1 B	10.0	101%	6.8%
1,4-Dichlorobenzene	9.02 B	10.0	90.2%	9.79 B	10.0	97.9%	8.2%
Acrolein	42.3	50.0	84.6%	49.9	50.0	99.8%	16.5%
Iodomethane	8.07	10.0	80.7%	8.73	10.0	87.3%	7.9%
Acrylonitrile	9.10	10.0	91.0%	10.1	10.0	101%	10.4%
1,1-Dichloropropene	9.66	10.0	96.6%	10.5	10.0	105%	8.3%
Dibromomethane	8.96	10.0	89.6%	9.86	10.0	98.6%	9.6%
1,1,1,2-Tetrachloroethane	7.50	10.0	75.0%	8.21	10.0	82.1%	9.0%
1,2-Dibromo-3-chloropropane	6.89	10.0	68.9%	8.76	10.0	87.6%	23.9%
1,2,3-Trichloropropane	9.17	10.0	91.7%	10.4	10.0	104%	12.6%
trans-1,4-Dichloro-2-butene	7.82	10.0	78.2%	9.63	10.0	96.3%	20.7%
1,3,5-Trimethylbenzene	9.88 B	10.0	98.8%	10.6 B	10.0	106%	7.0%
1,2,4-Trimethylbenzene	10.0	10.0	100%	10.8	10.0	108%	7.7%
Hexachlorobutadiene	9.34	10.0	93.4%	10.1	10.0	101%	7.8%
1,2-Dibromoethane	9.91	10.0	99.1%	11.2	10.0	112%	12.2%
Bromochloromethane	9.71	10.0	97.1%	10.4	10.0	104%	6.9%
2,2-Dichloropropane	9.08	10.0	90.8%	9.70	10.0	97.0%	6.6%
1,3-Dichloropropane	9.40	10.0	94.0%	10.6	10.0	106%	12.0%
Isopropylbenzene	9.97	10.0	99.7%	10.7	10.0	107%	7.1%
n-Propylbenzene	9.94 B	10.0	99.4%	10.6 B	10.0	106%	6.4%
Bromobenzene	9.46	10.0	94.6%	10.2	10.0	102%	7.5%
2-Chlorotoluene	9.76	10.0	97.6%	10.5	10.0	105%	7.3%
4-Chlorotoluene	9.52	10.0	95.2%	10.3	10.0	103%	7.9%
tert-Butylbenzene	9.87 B	10.0	98.7%	10.6 B	10.0	106%	7.1%
sec-Butylbenzene	10.0 B	10.0	100%	10.8 B	10.0	108%	7.7%
4-Isopropyltoluene	10.1	10.0	101%	10.8	10.0	108%	6.7%
n-Butylbenzene	10.0 B	10.0	100%	10.9 B	10.0	109%	8.6%
1,2,4-Trichlorobenzene	9.19	10.0	91.9%	10.1	10.0	101%	9.4%
Naphthalene	9.02	10.0	90.2%	10.5	10.0	105%	15.2%
1,2,3-Trichlorobenzene	9.11	10.0	91.1%	10.4	10.0	104%	13.2%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	95.3%	99.9%
d8-Toluene	101%	102%
Bromofluorobenzene	99.1%	101%
d4-1,2-Dichlorobenzene	97.8%	101%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
ATA9A	Trip Blank	10	104%	99.9%	99.4%	104%	0
MB-122315A	Method Blank	10	100%	99.4%	99.7%	101%	0
LCS-122315A	Lab Control	10	95.3%	101%	99.1%	97.8%	0
LCSD-122315A	Lab Control Dup	10	99.9%	102%	101%	101%	0
ATA9B	LMW-10-1215	10	106%	99.9%	99.4%	102%	0
ATA9C	LMW-2-1215	10	107%	102%	99.2%	104%	0
ATA9D	LMW-4-1215	10	107%	102%	98.8%	101%	0

SW8260C	LCS/MB LIMITS	QC LIMITS
(DCE) = d4-1,2-Dichloroethane	(80-129)	(80-129)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 15-24742 to 15-24745

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Matrix: Water

Data Release Authorized:
Reported: 12/22/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-121915	Method Blank	12/19/15	12/21/15	1.0	Gas	< 0.25 U
15-24743					Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	81.3%
ATA9B	LMW-10-1215	12/19/15	12/21/15	1.0	Gas	< 0.25 U
15-24743	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	41.0%
ATA9C	LMW-2-1215	12/19/15	12/21/15	1.0	Gas	< 0.25 U
15-24744	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	69.1%
ATA9D	LMW-4-1215	12/19/15	12/21/15	1.0	Gas	< 0.25 U
15-24745	HC ID: ---				Diesel	< 0.50 U
					Oil	< 0.50 U
					o-Terphenyl	72.4%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

HCID SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Client ID	O-TER	TOT OUT
MB-121915	81.3%	0
LMW-10-1215	41.0%*	1
LMW-2-1215	69.1%	0
LMW-4-1215	72.4%	0

	LCS/MB LIMITS	QC LIMITS
(O-TER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-24743 to 15-24745

FORM-II HCID

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 21:06
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Date Analyzed: 12/22/15 21:06

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	78.8%
d14-p-Terphenyl	90.4%	d4-1,2-Dichlorobenzene	72.8%
d5-Phenol	72.8%	2-Fluorophenol	72.0%
2,4,6-Tribromophenol	94.7%	d4-2-Chlorophenol	75.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 21:39
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS **Sample ID: LMW-2-1215**
Extraction Method: SW3520C **SAMPLE**

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Date Analyzed: 12/22/15 21:39

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.2%	2-Fluorobiphenyl	78.0%
d14-p-Terphenyl	90.8%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	68.3%	2-Fluorophenol	66.4%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	70.4%

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

ANALYTICAL RESOURCES INCORPORATED

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 22:11
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS **Sample ID: LMW-4-1215**
Extraction Method: SW3520C **SAMPLE**

Lab Sample ID: ATA9D QC Report No: ATA9-Golder Associates
LIMS ID: 15-24745 Project: Landsburg
Matrix: Water 9231000002 R273
Date Analyzed: 12/22/15 22:11

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.4%	2-Fluorobiphenyl	76.0%
d14-p-Terphenyl	88.4%	d4-1,2-Dichlorobenzene	66.8%
d5-Phenol	67.7%	2-Fluorophenol	66.4%
2,4,6-Tribromophenol	90.7%	d4-2-Chlorophenol	70.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: MB-122115
METHOD BLANK

Lab Sample ID: MB-122115
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 16:42
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
108-95-2	Phenol	0.27	1.0	< 1.0 U
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U
78-59-1	Isophorone	0.42	1.0	< 1.0 U
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U
65-85-0	Benzoic Acid	3.9	20	< 20 U
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U
91-20-3	Naphthalene	0.25	1.0	< 1.0 U
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U
100-02-7	4-Nitrophenol	1.8	10	< 10 U
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS **Sample ID: MB-122115**
Extraction Method: SW3520C **METHOD BLANK**

Lab Sample ID: MB-122115 QC Report No: ATA9-Golder Associates
LIMS ID: 15-24743 Project: Landsburg
Matrix: Water 9231000002 R273
Date Analyzed: 12/22/15 16:42

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.1**	**3.0**	**1.2 J**
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	71.2%	2-Fluorobiphenyl	81.6%
d14-p-Terphenyl	97.6%	d4-1,2-Dichlorobenzene	70.8%
d5-Phenol	76.3%	2-Fluorophenol	74.1%
2,4,6-Tribromophenol	107%	d4-2-Chlorophenol	78.9%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
MB-122115	71.2%	81.6%	97.6%	70.8%	76.3%	74.1%	107%	78.9%	0
LCS-122115	72.0%	85.2%	93.2%	73.6%	73.1%	71.7%	116%	76.8%	0
LCSD-122115	71.6%	81.6%	94.4%	71.2%	73.3%	70.4%	116%	75.2%	0
LMW-10-1215	68.8%	78.8%	90.4%	72.8%	72.8%	72.0%	94.7%	75.5%	0
LMW-2-1215	67.2%	78.0%	90.8%	68.8%	68.3%	66.4%	94.9%	70.4%	0
LMW-4-1215	66.4%	76.0%	88.4%	66.8%	67.7%	66.4%	90.7%	70.1%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(27-120)	(27-120)
(FBP) = 2-Fluorobiphenyl	(33-120)	(33-120)
(TPH) = d14-p-Terphenyl	(28-130)	(28-130)
(DCB) = d4-1,2-Dichlorobenzene	(20-120)	(20-120)
(PHL) = d5-Phenol	(38-120)	(38-120)
(2FP) = 2-Fluorophenol	(33-120)	(33-120)
(TBP) = 2,4,6-Tribromophenol	(52-131)	(52-131)
(2CP) = d4-2-Chlorophenol	(41-120)	(41-120)

Prep Method: SW3520C
Log Number Range: 15-24743 to 15-24745

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted LCS/LCSD: 12/21/15

Sample Amount LCS: 500 mL
LCSD: 500 mL

Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48

Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL

Instrument/Analyst LCS: NT6/JZ
LCSD: NT6/JZ

Dilution Factor LCS: 1.00
LCSD: 1.00

GPC Cleanup: NO

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Phenol	16.1		25.0	64.4%	15.7		25.0	62.8%	2.5%
Bis-(2-Chloroethyl) Ether	20.8		25.0	83.2%	20.7		25.0	82.8%	0.5%
2-Chlorophenol	16.8		25.0	67.2%	16.9		25.0	67.6%	0.6%
1,3-Dichlorobenzene	16.6		25.0	66.4%	17.2		25.0	68.8%	3.6%
1,4-Dichlorobenzene	17.6		25.0	70.4%	18.2		25.0	72.8%	3.4%
Benzyl Alcohol	19.5		25.0	78.0%	19.9		25.0	79.6%	2.0%
1,2-Dichlorobenzene	18.1		25.0	72.4%	18.6		25.0	74.4%	2.7%
2-Methylphenol	15.4		25.0	61.6%	15.8		25.0	63.2%	2.6%
2,2'-Oxybis(1-Chloropropane)	16.8	Q	25.0	67.2%	16.8	Q	25.0	67.2%	0.0%
4-Methylphenol	16.7		25.0	66.8%	16.9		25.0	67.6%	1.2%
N-Nitroso-Di-N-Propylamine	19.1	Q	25.0	76.4%	19.3	Q	25.0	77.2%	1.0%
Hexachloroethane	13.8		25.0	55.2%	14.9		25.0	59.6%	7.7%
Nitrobenzene	19.7		25.0	78.8%	19.8		25.0	79.2%	0.5%
Isophorone	20.2		25.0	80.8%	20.4		25.0	81.6%	1.0%
2-Nitrophenol	23.2	Q	25.0	92.8%	23.2	Q	25.0	92.8%	0.0%
2,4-Dimethylphenol	42.6		75.0	56.8%	42.5		75.0	56.7%	0.2%
Benzoic Acid	90.3		138	65.4%	94.6		138	68.6%	4.7%
bis(2-Chloroethoxy) Methane	22.9		25.0	91.6%	23.0		25.0	92.0%	0.4%
2,4-Dichlorophenol	51.1		75.0	68.1%	51.3		75.0	68.4%	0.4%
1,2,4-Trichlorobenzene	19.6		25.0	78.4%	20.1		25.0	80.4%	2.5%
Naphthalene	19.8		25.0	79.2%	19.9		25.0	79.6%	0.5%
4-Chloroaniline	53.7	Q	75.0	71.6%	53.2	Q	75.0	70.9%	0.9%
Hexachlorobutadiene	16.4		25.0	65.6%	17.2		25.0	68.8%	4.8%
4-Chloro-3-methylphenol	51.9		75.0	69.2%	50.5		75.0	67.3%	2.7%
2-Methylnaphthalene	22.8		25.0	91.2%	23.2		25.0	92.8%	1.7%
Hexachlorocyclopentadiene	47.9		75.0	63.9%	44.8		75.0	59.7%	6.7%
2,4,6-Trichlorophenol	55.0		75.0	73.3%	54.0		75.0	72.0%	1.8%
2,4,5-Trichlorophenol	55.5		75.0	74.0%	54.2		75.0	72.3%	2.4%
2-Chloronaphthalene	23.8		25.0	95.2%	23.4		25.0	93.6%	1.7%
2-Nitroaniline	58.4		75.0	77.9%	56.9		75.0	75.9%	2.6%

Lab Sample ID: LCS-122115 QC Report No: ATA9-Golder Associates
LIMS ID: 15-24743 Project: Landsburg
Matrix: Water 9231000002 R273
Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Dimethylphthalate	25.5		25.0	102%	25.2		25.0	101%	1.2%
Acenaphthylene	21.9		25.0	87.6%	21.5		25.0	86.0%	1.8%
3-Nitroaniline	84.8		75.0	113%	85.1		75.0	113%	0.4%
Acenaphthene	23.7		25.0	94.8%	23.4		25.0	93.6%	1.3%
2,4-Dinitrophenol	124	Q	138	89.9%	124	Q	138	89.9%	0.0%
4-Nitrophenol	37.7	Q	75.0	50.3%	37.4	Q	75.0	49.9%	0.8%
Dibenzofuran	22.4		25.0	89.6%	22.2		25.0	88.8%	0.9%
2,6-Dinitrotoluene	87.9	Q	75.0	117%	85.7	Q	75.0	114%	2.5%
2,4-Dinitrotoluene	85.7	Q	75.0	114%	84.3	Q	75.0	112%	1.6%
Diethylphthalate	24.0		25.0	96.0%	24.0		25.0	96.0%	0.0%
4-Chlorophenyl-phenylether	24.5		25.0	98.0%	24.2		25.0	96.8%	1.2%
Fluorene	22.2		25.0	88.8%	21.9		25.0	87.6%	1.4%
4-Nitroaniline	87.6		75.0	117%	87.1		75.0	116%	0.6%
4,6-Dinitro-2-Methylphenol	120	Q	138	87.0%	122	Q	138	88.4%	1.7%
N-Nitrosodiphenylamine	24.2		25.0	96.8%	24.4		25.0	97.6%	0.8%
4-Bromophenyl-phenylether	28.6		25.0	114%	28.9		25.0	116%	1.0%
Hexachlorobenzene	28.8		25.0	115%	29.0		25.0	116%	0.7%
Pentachlorophenol	64.9	Q	75.0	86.5%	65.3	Q	75.0	87.1%	0.6%
Phenanthrene	21.7		25.0	86.8%	21.6		25.0	86.4%	0.5%
Carbazole	24.9		25.0	99.6%	25.0		25.0	100%	0.4%
Anthracene	21.8		25.0	87.2%	21.8		25.0	87.2%	0.0%
Di-n-Butylphthalate	23.1		25.0	92.4%	22.8		25.0	91.2%	1.3%
Fluoranthene	22.6		25.0	90.4%	22.3		25.0	89.2%	1.3%
Pyrene	21.6		25.0	86.4%	21.8		25.0	87.2%	0.9%
Butylbenzylphthalate	24.8		25.0	99.2%	24.9		25.0	99.6%	0.4%
3,3'-Dichlorobenzidine	55.3		75.0	73.7%	54.6		75.0	72.8%	1.3%
Benzo(a)anthracene	21.9		25.0	87.6%	21.5		25.0	86.0%	1.8%
bis(2-Ethylhexyl)phthalate	29.6	B	25.0	118%	26.8	B	25.0	107%	9.9%
Chrysene	21.7		25.0	86.8%	21.6		25.0	86.4%	0.5%
Di-n-Octyl phthalate	24.9		25.0	99.6%	24.5		25.0	98.0%	1.6%
Benzo(b)fluoranthene	21.5		25.0	86.0%	22.6		25.0	90.4%	5.0%
Benzo(k)fluoranthene	22.6		25.0	90.4%	21.4		25.0	85.6%	5.5%
Benzo(a)pyrene	24.0		25.0	96.0%	23.5		25.0	94.0%	2.1%
Indeno(1,2,3-cd)pyrene	26.1		25.0	104%	25.6		25.0	102%	1.9%
Dibenz(a,h)anthracene	25.6		25.0	102%	25.2		25.0	101%	1.6%
Benzo(g,h,i)perylene	26.5		25.0	106%	25.9		25.0	104%	2.3%
3&4-Methylphenol	16.7		25.0	66.8%	16.9		25.0	67.6%	1.2%
1-Methylnaphthalene	21.6		25.0	86.4%	21.9		25.0	87.6%	1.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS

Sample ID: LCS-122115
LCS/LCSD

Lab Sample ID: LCS-122115
LIMS ID: 15-24743
Matrix: Water
Date Analyzed LCS: 12/22/15 17:15
LCSD: 12/22/15 17:48

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Total Benzofluoranthenes	44.1	50.0	88.2%	43.9	50.0	87.8%	0.5%

Semivolatile Surrogate Recovery

	LCS	LCSD
d5-Nitrobenzene	72.0%	71.6%
2-Fluorobiphenyl	85.2%	81.6%
d14-p-Terphenyl	93.2%	94.4%
d4-1,2-Dichlorobenzene	73.6%	71.2%
d5-Phenol	73.1%	73.3%
2-Fluorophenol	71.7%	70.4%
2,4,6-Tribromophenol	116%	116%
d4-2-Chlorophenol	76.8%	75.2%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-10-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:05
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	107%
Tetrachlorometaxylene	80.5%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-2-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:23
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	108%
Tetrachlorometaxylene	81.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-4-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:41
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.099	< 0.099 Y
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	122%
Tetrachlorometaxylene	81.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: MB-122215**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-122215
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 20:41
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	89.8%
Tetrachlorometaxylene	68.8%

ANALYTICAL RESOURCES INCORPORATED

SW8081/PESTICIDE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Client ID	DCBP	TCMX	TOT OUT
MB-122215	89.8%	68.8%	0
LCS-122215	82.8%	71.8%	0
LCSD-122215	87.8%	62.0%	0
LMW-10-1215	107%	80.5%	0
LMW-2-1215	108%	81.0%	0
LMW-4-1215	122%	81.0%	0

	LCS/MB LIMITS	QC LIMITS
(DCBP) = Decachlorobiphenyl	(11-144)	(11-144)
(TCMX) = Tetrachlorometaxylene	(30-120)	(30-120)

Prep Method: SW3510C
Log Number Range: 15-24743 to 15-24745

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LCS-122215**
Page 1 of 1 **LCS/LCSD**

Lab Sample ID: LCS-122215
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted LCS/LCSD: 12/22/15

Date Analyzed LCS: 01/04/16 20:59
LCSD: 01/04/16 21:17
Instrument/Analyst LCS: ECD6/YZ
LCSD: ECD6/YZ
GPC Cleanup: No
Florisil Cleanup: No

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 5.0 mL
LCSD: 5.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Sulfur Cleanup: No
Silica Gel: No

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
alpha-BHC	0.188	0.200	94.0%	0.172	0.200	86.0%	8.9%
beta-BHC	0.184	0.200	92.0%	0.173	0.200	86.5%	6.2%
delta-BHC	0.193	0.200	96.5%	0.186	0.200	93.0%	3.7%
gamma-BHC (Lindane)	0.190	0.200	95.0%	0.177	0.200	88.5%	7.1%
Heptachlor	0.175	0.200	87.5%	0.160	0.200	80.0%	9.0%
Aldrin	0.173	0.200	86.5%	0.161	0.200	80.5%	7.2%
Heptachlor Epoxide	0.188	0.200	94.0%	0.180	0.200	90.0%	4.3%
Endosulfan I	0.188	0.200	94.0%	0.178	0.200	89.0%	5.5%
Dieldrin	0.390	0.400	97.5%	0.373	0.400	93.2%	4.5%
4,4'-DDE	0.385	0.400	96.2%	0.358	0.400	89.5%	7.3%
Endrin	0.389	0.400	97.2%	0.352	0.400	88.0%	10.0%
Endosulfan II	0.381	0.400	95.2%	0.364	0.400	91.0%	4.6%
4,4'-DDD	0.411	0.400	103%	0.387	0.400	96.8%	6.0%
Endosulfan Sulfate	0.377	0.400	94.2%	0.315	0.400	78.8%	17.9%
4,4'-DDT	0.415	0.400	104%	0.384	0.400	96.0%	7.8%
Methoxychlor	1.79	2.00	89.5%	1.72	2.00	86.0%	4.0%
Endrin Ketone	0.392	0.400	98.0%	0.374	0.400	93.5%	4.7%
Endrin Aldehyde	0.368	0.400	92.0%	0.355	0.400	88.8%	3.6%
trans-Chlordane	0.191	0.200	95.5%	0.180	0.200	90.0%	5.9%
cis-Chlordane	0.188	0.200	94.0%	0.176	0.200	88.0%	6.6%

Pest/PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	82.8%	87.8%
Tetrachlorometaxylene	71.8%	62.0%

Results reported in µg/L (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 08:21
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	74.5%
Tetrachlorometaxylene	58.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 08:42
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.8%
Tetrachlorometaxylene	58.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 09:04
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.2%
Tetrachlorometaxylene	52.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-122315
METHOD BLANK

Lab Sample ID: MB-122315
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 04:44
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	62.0%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-122315	66.2%	29-120	62.0%	32-120	0
LCS-122315	60.2%	29-120	51.2%	32-120	0
LCSD-122315	66.5%	29-120	61.0%	32-120	0
LMW-10-1215	74.5%	29-120	58.0%	32-120	0
LMW-2-1215	80.8%	29-120	58.0%	32-120	0
LMW-4-1215	72.2%	29-120	52.5%	32-120	0

Prep Method: SW3510C
Log Number Range: 15-24743 to 15-24745

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A

Sample ID: LCS-122315
LCS/LCSD

Lab Sample ID: LCS-122315
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 12/23/15

Date Analyzed LCS: 12/31/15 05:06
LCSD: 12/31/15 05:28
Instrument/Analyst LCS: ECD7/JGR
LCSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount LCS: 1000 mL
LCSD: 1000 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	0.033	0.050	66.0%	0.052	0.050	104%	44.7%
Aroclor 1260	0.033	0.050	66.0%	0.038	0.050	76.0%	14.1%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	60.2%	66.5%
Tetrachlorometaxylene	51.2%	61.0%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**6,950**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**3,120**	
3010A	12/21/15	6010C	01/04/16	7439-96-5	Manganese	0.11	20	20	U
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**1,320**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**88,400**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**114,000**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	**7439-89-6**	**Iron**	3.6	200	**460**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**70,600**	
3010A	12/21/15	6010C	01/04/16	**7439-96-5**	**Manganese**	0.11	20	**232**	
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**3,650**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**21,000**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**114,000**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	**7439-89-6**	**Iron**	3.6	200	**1,010**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**70,200**	
3010A	12/21/15	6010C	01/04/16	**7439-96-5**	**Manganese**	0.11	20	**190**	
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**3,820**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**24,500**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: ASY3MB
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/28/15	7429-90-5	Aluminum	5	50	50	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	0.2	0.2	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.03	0.2	0.2	U
3010A	12/21/15	6010C	12/28/15	7440-39-3	Barium	1.5	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-41-7	Beryllium	0.06	1	1	U
3010A	12/21/15	6010C	12/28/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/28/15	7440-70-2	Calcium	1.2	50	50	U
3010A	12/21/15	6010C	12/28/15	7440-47-3	Chromium	0.47	5	5	U
3010A	12/21/15	6010C	12/28/15	7440-48-4	Cobalt	0.29	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-50-8	Copper	0.2	2	2	U
3010A	12/21/15	6010C	12/28/15	7439-89-6	Iron	3.6	50	50	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	0.1	0.1	U
3010A	12/21/15	6010C	12/28/15	7439-95-4	Magnesium	7	50	50	U
3010A	12/21/15	6010C	12/28/15	7439-96-5	Manganese	0.1	1	1	U
3010A	12/21/15	6010C	12/28/15	7440-02-0	Nickel	2	10	10	U
3010A	12/21/15	6010C	12/28/15	7440-09-7	Potassium	15.0	500	500	U
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	0.5	0.5	U
3010A	12/21/15	6010C	12/28/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-23-5	Sodium	4.2	500	500	U
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	0.2	0.2	U
3010A	12/21/15	6010C	12/28/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/28/15	7440-66-6	Zinc	2	10	10	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: ASY3LCS
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010C	2000	2000	100%	
Antimony	200.8	24.0	25.0	96.0%	
Arsenic	200.8	24.4	25.0	97.6%	
Barium	6010C	2150	2000	108%	
Beryllium	6010C	488	500	97.6%	
Cadmium	6010C	505	500	101%	
Calcium	6010C	9860	10000	98.6%	
Chromium	6010C	508	500	102%	
Cobalt	6010C	510	500	102%	
Copper	6010C	503	500	101%	
Iron	6010C	1950	2000	97.5%	
Lead	200.8	26.2	25.0	105%	
Magnesium	6010C	10500	10000	105%	
Manganese	6010C	484	500	96.8%	
Nickel	6010C	530	500	106%	
Potassium	6010C	9920	10000	99.2%	
Selenium	200.8	79.4	80.0	99.2%	
Silver	6010C	546	500	109%	
Sodium	6010C	10200	10000	102%	
Thallium	200.8	23.6	25.0	94.4%	
Vanadium	6010C	520	500	104%	
Zinc	6010C	510	500	102%	

Reported in µg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/17/15
Page 1 of 1

QC Report No: ATB0-Golder Associates
Project: Landsburg
9231000002 R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-10-1215 ATB0A 15-24761	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-2-1215 ATB0B 15-24762	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-4-1215 ATB0C 15-24763	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

FORM-I

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: TLM Matrix: water
Analyst: MH Date: 12/28/15
Bath Temp: 94°C Start Time: 1500 End Time: 1700

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
ASW1 A	1	✓	20.0	20.0	12/27 1	Y	
" B	1	✓			1		
" MB	—	—			1		
" MBSPK	—	—			1	↓	
ASV9 A	1	✓			12/26 1	N	
" ADUP	1	✓			1		
" ASPK	1	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" D	1	✓			1		
" MB	—	—			1		
" MBSPK	—	—			1		
ATA3 A	1	✓			12/27 1		Batch
" ADUP	1	✓			1		
" ASPK	1	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" D	1	✓			1		
" E	1	✓			1		
" MB	—	—			1		
" MBSPK	—	—			1		
ATBØ A	1	✓			12/28 1		
" B	1	✓	↓	↓	1	↓	
" C	1	✓	20.0	20.0	1	N	↓
				MH 12/23/15			

Chemical/Reagent ID:

HNO_3: D3791 H_2SO_4: D2685 HCl: —
5% $K_2S_2O_8$: D4750 5% $KMnO_4$: D4044 Digest Tube Lot: 1304103

APPENDIX B
SAMPLE INTEGRITY DATA SHEETS (SIDS)

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-2-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12/17/15 **Time** 1040

Media Water **Station** LMW-2

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

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

SWL – 5.59 @1105 on 12/11/2015 (inner PVC) ft below TOC (monument at elev. X) (bottom at 38.1 ft bgs, 4-in casing)

Screen Interval – 27.9-38.1 ft bgs Monument: 2.94 ags

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

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

Sample Description Clear, Sulphur Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1 Liter~~ 500ml, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/17/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-2
Date 12/17/15
Time Begin Purge 0956
Time Collect Sample 1043

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
7.74	1006	—	7.01	891	10.6	1.11	0.23	+139
7.76	1011	—	6.99	891	10.2	0.00	0.18	+151.2
7.76	1016	—	6.99	888	10.7	0.00	3.01	+143.3
7.76	1021	—	6.98	886	10.7	0.00	0.36	+137.7
7.75	1026	—	6.99	885	10.7	0.00	0.19	+134.6
7.76	1031	—	6.99	885	10.7	0.00	0.23	+131
7.76	1036	—	6.99	887	10.7	0.00	0.28	+126.8

Comments: GRuntos: 15 Hz

$\frac{5\text{ gal}}{2\text{ min}} = 2.5\text{ gal/min}$ $\frac{30\text{ gal/well}}{2.5\text{ gal/min}} = 12\text{ min/well} \times 3 = 36\text{ min}$

* wl measured from TOC

Sampler's Initials JM

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-3-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12/16/15 **Time** 0930

Media Water **Station** LMW-3

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

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

SWL – 9.15 @ 945 on 12/11/2015 (inner PVC) ft below TOC (monument at elev. X) (bottom at 64.8 ft bgs, 4-in casing)

Screen Interval – 49.8-64.8 ft bgs Monument: 3.08 ags

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

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

(~27.0 gal/total well vol below packer)

Sample Description Clear No Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1 Liter~~ 500 mL, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/16/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-3
Date 12/16/15
Time Begin Purge 0834
Time Collect Sample 0930

(pH)

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
10.95	0855	—	7.98	317	10.8	0.05	1.44	+250.2
	0900	No Reading adjusted Tubing						
10.95	0904	—	7.93	317	11.1	0.00	1.47	+184.2
10.95	0910	—	7.91	316	11.2	0.00	1.18	+173.1
10.95	0915	—	7.89	304	11.2	0.00	1.28	+165.2
10.95	0920	—	7.90	299.2	11.2	0.00	1.14	+161.5
10.95	0925	—	7.91	290.2	11.2	0.00	1.31	+159.2

Comments:
PID = 0.0 ppm
Packer 110 psi
Grunfos 155 Hz

$\frac{5\ gal}{2.5\ min} = 2\ gal/min$

$\frac{27\ gal/well}{2\ gal/min}$ 13.5 min/well x 3 = 40.5 min

Sampler's Initials JM

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-4-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12/17/15 **Time** 1200

Media Water **Station** LMW-4

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

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

SWL – 7.46 @1108 on 12/11/15 (inner PVC) - not adjusted for angle. ft below TOC (monument at elev. X) (bottom at 209.7 ft bgs, 4-in casing)

Screen Interval – 195-209.7 ft bgs Monument: 2.76 ags

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

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

(~26.9 gal/total well vol below packer)

** Depths corrected for 70° inclination

Sample Description Sulfur Odor Clear

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 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1 Liter~~ 500ml, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/17/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-4
Date 12/17/15
Time Begin Purge 1100
Time Collect Sample 1200

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
8.61	1110	—	7.92	898	10.6	0.13	0.38	+114.2
8.58	1120	—	7.61	897	10.2	0.00	1.21	+104.7
8.57	1130	—	7.00	898	10.7	0.00	0.144	+93.9
8.57	1140	—	7.00	898	10.7	0.00	0.30	+84.0
8.57	1150	—	7.00	898	10.7	0.00	0.32	+76.3

Comments:

Packer 140 psi
Counts ~~44~~ 125 Hz

$\frac{991}{3.5} = 143$ $\frac{27}{1.43} = 18.88$ 57 min

WL not corrected for inclination, measured @ outer 'x'

Sampler's Initials JAR

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-5-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12-16-15 **Time** 1120

Media Water **Station** LMW-5

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

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

SWL – 10.72 @952 on 12/16/15 (inner PVC) ft below TOC (monument at elev. X) (bottom at 241.8 ft bgs, 4-in casing)

Screen Interval – 231.8-241.8 ft bgs Monument: 3.24 ags

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

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

(~18.7 gal/total well vol below packer)

Sample Description Clear ~~slight~~ Sulphur Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1~~ Liter; 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/16/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-5
Date 12-16-15
Time Begin Purge 1031
Time Collect Sample ~~1130~~ 1120

pH

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
12.86	1041	—	7.04	703	10.9	0.05	1.31	+162.0
12.86	1046	—	7.02	700	11.0	0.00	1.17	+144.9
12.86	1051	—	7.00	702	11.0	0.00	1.21	+132.8
12.86	1056	—	7.00	703	11.1	0.00	1.31	+121.7
12.86	1101	—	7.00	706	11.2	0.00	1.27	+112.2
12.86	1106	—	7.01	704	11.1	0.00	1.47	+103.2
12.86	1111	—	7.01	705	11.1	0.00	1.05	+96.7
12.86	1116	—	7.01	703	11.1	0.00	1.44	+92.0
	1120	Sample						
	~~1126~~							

Comments:
*WL measured from outer casing 'X'
Packer 130 psi
Grunfos ~~125HZ~~ 145HZ

5gal / 5min = 1gal/min   19 gal well / 1gal/min = 57 (Increased Flow Rate)

5gal / 4min = 1.25gal/min   19 gal/well / 1.25gal/min = 15.2 min/well X3 = 46min

Sampler's Initials JM

Golder Associates

Field_parameters_blank.xlsLandsburg

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-6-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12/15/15 **Time** 1205

Media Water **Station** LMW-6

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

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

SWL -22.58 @1020 on 12/11/15 (inner PVC) ft below TOC (monument at elev. X) (bottom at 105.9 ft bgs, 4-in casing)

Screen Interval – 90.9-105.9 ft bgs Monument: 3.05 ags

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

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

(~29.9 gal/total well vol below packer)

Sample Description Clear No Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – 1 Liter, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/15/2015

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-6
Date 12/15/15
Time Begin Purge ~~1111~~ 1105
Time Collect Sample 1205

(pH)

Water Level feet bmp x	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
23.11	1115	—	7.06	260.0	9.6	0.00	2.73	-78.9
23.11	1120	—	7.08	259.6	9.6	0.00	2.65	-79.5
23.11	1125	—	7.09	259.8	9.7	0.00	2.68	-80.3
23.11	1130	—	7.10	260.1	9.6	0.00	1.14	-81.1
23.11	1135	—	7.11	259.7	9.7	0.00	0.91	-82.0
23.11	1140	—	7.11	260.1	9.7	0.00	0.73	-82.6
23.11	1145	—	7.11	260.1	9.7	0.00	0.76	-83.3
23.11	1150	—	7.11	260.4	9.7	0.00	0.68	-83.8
23.11	1155	—	7.11	259.9	9.8	0.00	0.67	-84.2
23.11	1200	—	7.11	260.0	9.8	0.00	0.74	-84.6

Comments:

Bladder: 130psi
PID = 0.0ppm
Grundfos = 165 Hz

$\frac{5\ gal}{3\ min} = 1.67\ GPM = \frac{30\ gal/well\ volume}{1.67\ gpm}$ 18 min/well vol X 3

54 min Purge

X Measured from outer casing "x"

Sampler's Initials jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-7-1215, LMW-7-1215-D

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Pump Grundfos

Date 12/15/2015 **Time** 1350/1355

Media Water **Station** LMW-7

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

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

SWL – 223.22 @1145 on 12/11/15 (innerPVC) not adjusted for angle ft below TOC (monument at elev. X) (bottom at 253.7 ft bgs, 4-in casing)

Screen Interval – 239.6-253.7 ft bgs Monument: 3.09 ags

Sand Pack Interval – NA

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

Sample Description clear, moder

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

SEE FIELD PARAMETERS SHEET Eh meter may have drifted

Aliquot Amount	Analysis	Container	Preservation / Amount
6 – 40 mL	VOA	VOA Vial	HCl
2 – 500 ml	Total Metals	HDPE	HNO3 (non)
2 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
8 – 1 Liter, 4 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
4 – 1 Liter, 4 – 500 ml	PCBs/Pest	Glass Amber	none
4 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/15/2015

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-7 LMW-7-DUP
Date 12/15/2015
Time Begin Purge 1240
Time Collect Sample 1350 Dup 1355

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
224.41	1255	—	7.45	511	12.0	0.15	1.07	-85.8
224.41	1305	—	7.42	520	12.7	0.10	1.00	-87.3
224.41	1315	—	7.40	536	12.7	0.08	0.91	-88.4
224.41	1325	—	7.37	568	12.7	0.06	0.87	-89.4
224.41	1335	—	7.35	577	12.7	0.05	0.88	-89.9
224.41	1345	—	7.35	573	12.7	0.04	0.71	-90.4

Comments:
Grundfos 350Hz
$\frac{5\text{ gal}}{4\text{ min}} = 1.25\text{ gal/min}$ $\frac{25.3\text{ well}}{1.25\text{ gal/min}} = 22.64\text{ min/well vol}$ x3 67.9 min
70 min
PID 0.0 ppm
WL from YSI, not corrected. Not adjusted for inclination

Sampler's Initials jsl

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-8-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Dedicated Tubing and Peristaltic Pump, Bailer for VOC samples

Date 12/16/2015 **Time** 1210

Media Water **Station** LMW-8

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

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

SWL – 2.66 @0957 on 12/11/2015 ft below TOC (PVC at black notch) (bottom at 13 ft bgs, 2-in casing)

Screen Interval – 8-13 ft bgs PVC stickup: 1.72 ags

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

Packer Depth – NA (~1.9 gal/casing vol) (~7.0 gal/total well vol)

Sample Description clear, no color

EB-1215 collected through Peristaltic w/ lab provided water @0945

↳ see EB SIDS form for details

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 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – 1 Liter, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) _____ **Date** 12/16/2015

Supervisor (signature) _____ **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-8
Date 12/16/2015
Time Begin Purge 1130
Time Collect Sample 1210

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
6.15	1140	6 —	6.94	397	10.2	0.12	24.8	+174.6
7.02	1145	—	6.96	399	10.4	0.04	20.5	+160.8
7.45	1150	—	6.98	402	10.4	0.02	12.9	+150.4
8.03	1155	—	6.99	407	10.5	0.02	12.2	+146.4
8.35	1200	—	7.01	410	10.6	0.00	6.90	+140.4
8.58	1205	—	7.01	410	10.6	0.00	5.09	+138.4

(pH)

Comments:
* Collected VOCs + HCID thru tubing
PID = 0.0 ppm

945 - Collected EB before purge. Through tubing (and 0.45 µm filter for dissolved metals) using lab provided DI water EB-1215
* VOC water for 40mL vials

WL collected from inner PVC @ mark
Rate: ~300mLs/min

↳ See EB SIDS form for details

Sampler's Initials JS

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-9-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Pump Grundfos and Dedicated Tubing

Date 12/16/15 **Time** 1330

Media Water **Station** LMW-9

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

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

SWL – 96.44 0938 on 12/11/15 ft below TOC (PVC at black notch) (bottom at 159 ft bgs, 2-in casing)

Screen Interval – 149-159 ft bgs PVC stickup: 2.86 ags

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

Packer Depth – NA (~10.2 gal/casing vol) (~21.6 gal/total well vol)

Sample Description Clear No Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1 Liter~~ 500mL, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/16/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-9
Date 12/16/15
Time Begin Purge 1250
Time Collect Sample 1330

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
98.02	1300	—	7.12	641	11.5	0.00	1.24	+169.0
98.03	1305	—	7.12	638	11.5	0.00	1.30	~~+164.1~~ +164.1
98.03	1310	—	7.13	637	11.5	0.00	1.33	+156.7
98.03	1315	—	7.12	637	11.5	0.00	1.27	+152.8
98.03	1320	—	7.12	636	11.5	0.00	1.44	+150.7
98.03	1325	—	7.13	636	11.5	0.00	1.25	+148.4

Comments:
Grunfos : 250 ml
PID : 0.0 ppm

$\frac{5\,gal}{2\,min} = \frac{2.5\,gal}{min} \times \frac{21.6\,gal/well}{2.5} = 8.6\,min/well = 25.92$

WL collected from inner PVC @ mark

Sampler's Initials AH

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-10-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler QED Bladder

Date 12/17/15 **Time** 0930

Media Water **Station** LMW-10

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

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

SWL – 0.28 @1130 on 12/11/2015 ft below TOC (PVC) (bottom at 289 ft bgs, 4-in casing)

Screen Interval – 267-289 ft bgs PVC stickup: 3.12 ags

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

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

Sample Description Clear No Odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – 1 Liter, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

Sampler (signature) [signature] **Date** 12/17/15

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-10
Date 12/17/18
Time Begin Purge 0846
Time Collect Sample 0930

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV
5.56	0905	—	8.95	357	9.8	0.41	0.91	+55.8
6.58	0910	—	8.93	355	9.8	0.00	0.63	+34.4
7.24	0915	—	8.93	360	9.8	0.00	0.22	+23.5
9.10	0920	—	8.96	360	9.9	0.00	0.75	+16.5
9.75	0925	—	8.93	360	9.9	0.00	0.55	+14.9

Comments:
Flow Rate - 300ml/min
TANK PSI 110psi
Controller 60PSI
CycleID: 50 (20/20) 2cpm

WL collected from inner PVC @ mark.

Sampler's Initials JM

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** LMW-11-1215

Sampling Location Groundwater Monitoring Well End of dedicated sampling tube

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Pump Grundfos and QED Bladder

Date 12/15/2015 **Time** 1000

Media Water **Station** LMW-11

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

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

SWL – 154.24 @ 0931 on 12/11/2015 ft below TOC (PVC) (bottom at 707 ft bgs, 4-in casing)

Screen Interval – 696-707 ft bgs PVC stickup: 2.70 ags

Sand Pack Interval – 688-707 ft bgs (8-in hole) (~11.2 gal/sand pack)

Packer Depth – NA (~360.4 gal/casing vol) (~371.6 gal/total well vol)

Sample Description Clear, slight sulfur odor

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

SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation / Amount
3 – 40 mL	VOA	VOA Vial	HCl
1 – 500 ml	Total Metals	HDPE	HNO3 (non)
1 – 500 ml	Dissolved Metals	HDPE	HNO3 (filter)
4 – ~~1 Liter~~ 500 mL, 2 – 40 ml	TPH-HCID	Glass Amber, VOA Vial	HCl
2 – 1 Liter, 2 – 500 ml	PCBs/Pest	Glass Amber	none
2 – 500 mL	SVOCs	Glass Amber	none

(17)

Sampler (signature) Jill Lark **Date** 12/15/2015

Supervisor (signature) [signature] **Date** 12/21/15

FIELD PARAMETERS SHEET

Well ID LMW-11
Date 12/15/2015
Time Begin Purge 0845 (Grundfos), 0922 (Bladder)
Time Collect Sample 1000

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh (pH) Rel mV
155.44	0932		7.51	560	10.3	1.23	1.83	+317.6
155.45	0937		7.49	562	10.2	0.69	0.88	+300.1
155.45	0942		7.51	562	10.3	0.73	0.90	+291.4
155.45	0947		7.53	561	10.3	0.50	0.95	+286.7
155.45	0952		7.53	558	10.4	0.48	0.84	+282.6
156.45	0957		7.54	557	10.4	0.43	1.07	+280.4

Comments:
0845 - Start pump (Grundfos) @ ~170' btoc, 300.Hz Purge Rate $\frac{5\,gal}{4\,min}$ = 1.25gpm
0922 - Start bladder pump PID=0.0 ppm

Tank: 110psi
Controller: 110psi
ID: 7 cpm (30, 30s/30s)
Rate: ~400 mLs/min

WL collected from inner PVC @ mark.

Sampler's Initials JSI

SAMPLE INTEGRITY DATA SHEET

Plant/Site Landsburg Mine Site **Project No.** 923-1000-002

Site Location Ravensdale, WA **Sample ID** EB-1215

Sampling Location End of new tubing from lab provided water through peristaltic pump (and filter for dissolved metals)

Technical Procedure Reference(s) TP-1.4-6A, TP-1.2-20, TP-1.2-23

Type of Sampler Peristaltic pump

Date 12/16/15 **Time** 0945

Media Water **Station** LMW-8

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

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

SWL – — ft below TOC

Sample Description End of new tubing from lab provided water through peristaltic pump (and filter for dissolved metals)

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 (non)
1-500 ml	dissolved Metals	HDPE	HNO3 (filter)
4-500ml, 2-40 ml	TPH-HCID	Glass Amber, VOA	HCl (VOA)
2-1L ,2-500ml	PCB/PEST	Glass Amber	none
2-500ml	SVOC	Glass Amber	none

Sampler (signature) _____ **Date** 12-16-15

Supervisor (signature) _____ **Date** 12-21-2015

FIELD PARAMETERS SHEET

Well ID EB-12S
Date 12-16-15
Time Begin Purge —
Time Collect Sample 0945

Water Level feet bmp	Time	Volume Purged	pH	Conductivity uS/cm	Temp. °C	DO mg/L	Turbidity NTU	Eh Rel mV

Comments:
Collected EB Before Purge at MW-8, through tubing (and 0.45μm filter for dissolved Metal(s) using lab provided DI water for VOC water for 40mL Vogs

Sampler's Initials JSM

APPENDIX C

DECEMBER 2015 LANDSBURG MINE SITE WATER QUALITY MONITORING DATA VALIDATION AND QUALITY ASSURANCE / QUALITY CONTROL REVIEW MEMORANDUM

TECHNICAL MEMORANDUM

Date:	January 17, 2016	**Project No.:**	923-1000-002-R273
To:	Bill Kombol	**Company:**	Palmer Coking Coal Company
From:	Jill Lamberts, Project Environmental Scientist		
cc:	Gary Zimmerman		Jill_Lamberts@Golder.com

RE: DECEMBER 2015 LANDSBURG MINE SITE WATER QUALITY MONITORING DATA VALIDATION & QUALITY ASSURANCE/QUALITY CONTROL REVIEW

Fifteen (15) water samples (including 1 field duplicate, 3 trip blanks, and 1 equipment blank) (Table 1) were collected by Golder Associates between December 15 and 17, 2015 as part of the December 2015 Landsburg Mine Site Water Quality Monitoring sampling event. Samples were analyzed by Analytical Resources, Incorporated (ARI) of Tukwila, Washington for the following constituents:

- Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (EPA) Method SW8260C;
- Semi-Volatile Organic Compounds (SVOCs) by GC/MS by EPA SW8270D;
- Pesticides by EPA SW8081B;
- Polychlorinated Biphenyls (PCBs) by EPA SW8082A;
- Northwest Total Petroleum Hydrocarbon Identification Scan (NWTPH-HCID) by NWTPH-HCID Method; and,
- Total Metals EPA Method 6010C and 200.8; and Mercury by EPA 7470A.

This review covers three sample delivery group packages provided by ARI: ASV5, ASV9, ASY3, ATA3, ATI2, ATA9, and ATB0.

Samples were analyzed in accordance with procedures described in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (United States EPA SW-846, 3rd edition) (USEPA 2015). Quality assurance/quality control (QA/QC) reviews of laboratory data were performed in the laboratory in accordance with the laboratory's quality assurance program plan. The data validation QA/QC review focused primarily on laboratory result summary sheets and quality control summary sheets 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 Function Guidelines for Inorganic Review (USEPA 2014a) and National Functional Guidelines for Organic Review (USEPA 2014b), modified to include method specific requirements of the laboratory analytical methods and laboratory standard operating procedures (SOPs).

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

- Data Package Completeness;
- Verification of required deliverables;
- Evaluation of field forms and field instrument calibrations;
- Evaluation of holding times and preservations;

- Laboratory narrative evaluation;
- Evaluation and qualification of QC elements for: Surrogates, Matrix Spike, Laboratory Control samples, Laboratory Duplicates, Method Blanks, and Field Blank and Field Duplicate evaluation as applicable;
- Evaluation of detection limits;

Raw data was not provided and calibration elements, including Gas Chromatograph (GC) instrument tuning and performance check, initial and continuing calibration, internal standard performance, and compound identification, were not evaluated unless information was provided by the lab in the case narratives. Data review and validation was performed by an experienced quality assurance chemist independent of the analytical laboratory. 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 where indicated by data qualifiers (Table 2), which are defined below. Refer to Data Evaluation Checklists in Attachment A for details of the data validation. Qualified data sheets are provided in Attachment B.

Data Qualifier Definitions

U	The constituent was analyzed for, but was not detected above the reported sample quantitation limit.
J	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result is less than the quantitation limit or quality control criteria were not met.
J+	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased high.
J-	The constituent was positively identified and detected; however, the concentration reported is an estimated value because the result may be biased low.
UJ	The constituent was not detected; the associated quantitation limit is an estimated value because quality control criteria were not met.
R	Data are rejected due to significant exceedance of quality control criteria. The analyte may or may not be present. Additional sampling and analysis may be required to determine the presence or absence of the constituent. For statistical reasons, rejected values are not included in the database.
UR	The constituent is rejected at the reported quantitation limit.
DNR	Do Not Report. More than one set of results are reported due to re-analyses or re-reporting (below reporting level). This result should not be reported.

Data Validation Comments

- Continuing Calibration Verifications (CCALs) for VOCs and SVOCs analysis were noted by ARI as either being out of specification high or low. Since all associated samples were non-detects, no action was taken for CCALs that were out of control high. For CCALs that were out of control low, the associated sample results were qualified as estimated (UJ) as shown in Table 2.

- LMW-3-1215 was extracted and analyzed for SVOCs by lab twice. The first analysis contained low levels of bis(2-ethylhexyl)phthalate, likely due to lab contamination. The second analysis was non-detect for bis(2-ethylhexyl)phthalate. The second analysis is selected for reporting and the first analysis is designated "Do not report" (DNR).
- Analytes were detected in the trip, equipment, and method blanks. Blank contamination was compared to sample results based on equivalent concentrations. Following Guidelines, when the blank contamination was less than the MRL and the associated sample result was greater than the MRL, no qualifications were required. If the blank contamination was less than the MRL and the associated sample result was also less than the MRL, the sample was qualified as non-detect (U) at the MRL.
- Lab noted that several LCS/LCSD percent recoveries and LCS/LCSD percent RPDs were out of control. No qualifications were applied since the out of control analytes were already qualified due to CCALs being out of specification or all other QC was in control.
- Limit of Quantitation (LOQ) was raised for gamma-BHC (Lindane) for sample LMW-5-1215, pesticide analysis (8081B) and flagged by lab as "Y". Qualify as "U".
- Surrogate o-Terphenyl out of control low for HCID analysis of sample LMW-10-1215. Sample was qualified as estimated (UJ), but note that result is consistent with historical values.
- SDG ASV5/ASV9: Lab notes that 2 of 6 VOC vials for Trip Blank had small bubbles. No action taken other than to note. Small- and pea-sized bubbles (< 4 millimeters [mm]) are not considered to affect VOC results, especially if analyzed within seven days. Protocol dictates that the lab will choose vials without bubbles or headspace for analysis. The Trip Blank had no detections of VOCs.
- For metals analysis, the chromium MS was flagged as having no recovery. This was due to the raised reporting limits required by the project. No action was taken other than to note.
- There were no other QA/QC issues noted. The Data Evaluation Checklists are provided in Attachment A and the validated laboratory data sheets are provided in Attachment B.

Tables

Table 1 Sample Collection and Analysis Summary

Table 2 Qualifier Summary Table

Attachments

Attachment A Data Evaluation Checklists

QA Level 2A – Inorganic Data Evaluation Checklist

QA Level 2A – Organic Data Evaluation Checklist

Attachment B Validated Analytical Reports

References

United States Environmental Protection Agency (USEPA). 2014a. USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Superfund Data Review. OSWER 9355.0-131.EPA-540-R-013-001, August.

USEPA. 2014b. USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. OSWER 9355.0-132.EPA-540-R-014-002, August.

USEPA. 2015. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846. Third Edition. Washington DC: USEPA Office of Solid Waste. Available on the Web at: http://www.epa.gov/waste/hazard/testmethods/sw846/online/index.htm (accessed June 23, 2015).

TABLES

TABLE 1

Sample Collection and Analysis Summary
Landsburg Groundwater Sampling - December 2015

					Analysis/Parameters						
SDG	Field Identification	Collection Date	Matrix	QC Samples	VOCs (SW8260C)	SVOCs (SW8270D)	Pesticides/PCBs (SW8081B)	PCBs (SW8082A)	Hydrocarbon Identification Scan (NWTPH-	Total Metals (EPA 200.8 and 6010C)	Total Mercuery (SW7470A)
ASV5/ASV9	Trip Blank 121515	12/15/2015	DI Water	TB	X						
ASV5/ASV9	LMW-11-1215	12/15/2015	Groundwater		X	X	X	X	X	X	X
ASV5/ASV9	LMW-6-1215	12/15/2015	Groundwater		X	X	X	X	X	X	X
ASV5/ASV9	LMW-7-1215	12/15/2015	Groundwater		X	X	X	X	X	X	X
ASV5/ASV9	LMW-7-1215-D	12/15/2015	Groundwater	FD	X	X	X	X	X	X	X
ASY3/ATA3/ATI2	Trip Blank 121615	12/16/2015	DI Water	TB	X						
ASY3/ATA3/ATI2	LMW-3-1215	12/16/2015	Groundwater		X	X	X	X	X	X	X
ASY3/ATA3/ATI2	EB-1215	12/16/2015	Groundwater	EB	X	X	X	X	X	X	X
ASY3/ATA3/ATI2	LMW-5-1215	12/16/2015	Groundwater		X	X	X	X	X	X	X
ASY3/ATA3/ATI2	LMW-8-1215	12/16/2015	Groundwater		X	X	X	X	X	X	X
ASY3/ATA3/ATI2	LMW-9-1215	12/16/2015	Groundwater		X	X	X	X	X	X	X
ATA9/ATB0	Trip Blank 121715	12/17/2015	DI Water	TB	X						
ATA9/ATB0	LMW-10-1215	12/17/2015	Groundwater		X	X	X	X	X	X	X
ATA9/ATB0	LMW-2-1215	12/17/2015	Groundwater		X	X	X	X	X	X	X
ATA9/ATB0	LMW-4-1215	12/17/2015	Groundwater		X	X	X	X	X	X	X

Notes:
All analyses performed by ARI Laboratory

Abbreviations:
DI - deionized or distilled
FD - field duplicate
EB - equipment blank
QC - quality control
SDG -sample delivery group
TB - trip blank

TABLE 2

Qualifier Summary Table
Landsburg Groundwater Sampling - December 2015

SDG	Sample Name	Constituent	New Result	New MRL	Qualifier	Reason
AT12	LMW-3-1215 (reanalysis)	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-3-1215 (initial analysis)	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASY3	LMW-3-1215 (initial analysis)	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-3-1215 (initial analysis)	DNR ALL RESULTS except for 3&4-Methylphenol, Benzo(b)fluoranthene, and Benzo(k)fluoranthene				
ASY3	EB-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASY3	EB-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-9-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASY3	LMW-9-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	Chloromethane	0.5	0.5	U	Trip Blank contamination.
ASY3	LMW-9-1215	Chloromethane	0.5	0.5	U	Trip Blank contamination.
ASY3	Trip Blank 121615	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	Trip Blank 121615	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	Trip Blank 121615	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	LWM-3-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	LWM-3-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	LWM-3-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	EB-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	EB-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	EB-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	LMW-8-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	LMW-9-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASY3	LMW-9-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASY3	LMW-9-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASY3	LMW-5-1215	gamma-BHC (Lindane)	-	-	U	Raised LOQ due to chromatographic interference.
ATA9	LMW-10-1215	Chloromethane	0.5	0.5	U	Trip Blank contamination.
ATA9	LMW-2-1215	Chloromethane	0.5	0.5	U	Trip Blank contamination.
ATA9	LMW-4-1215	Chloromethane	0.5	0.5	U	Trip Blank contamination.
ATA9	LMW-10-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	Bromoform	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	Bromoform	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	Bromoform	-	-	UJ	CCAL out of control low.
ATA9	Trip Blank 121715	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ATA9	Trip Blank 121715	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ATA9	Trip Blank 121715	Bromoform	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	Gas	-	-	UJ	Surrogate out of control low.
ATA9	LMW-10-1215	Diesel	-	-	UJ	Surrogate out of control low.
ATA9	LMW-10-1215	Oil	-	-	UJ	Surrogate out of control low.
ATA9	LMW-10-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	4-Chloroaniline	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ATA9	LMW-10-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	4-Chloroaniline	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ATA9	LMW-2-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	4-Chloroaniline	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ATA9	LMW-4-1215	gamma-BHC (Lindane)	-	-	U	Raised LOQ due to chromatographic interference.
ASV5	Trip Blank 121515	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASV5	Trip Blank 121515	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASV5	Trip Blank 121515	Bromoform	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.

TABLE 2

Qualifier Summary Table
Landsburg Groundwater Sampling - December 2015

SDG	*Sample Name*	*Constituent*	*New Result*	*New MRL*	*Qualifier*	*Reason*
ASV5	LMW-11-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	Bromoform	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	Carbon Tetrachloride	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	Dibromochloromethane	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	Bromoform	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	Isophorone	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASV5	LMW-11-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	Isophorone	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASV5	LMW-6-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	Isophorone	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	2,2'-Oxybis(1-Chloropropane)	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	Isophorone	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	4-Nitrophenol	-	-	UJ	CCAL out of control low.
ASV5	LMW-7-1215-D	N-nitroso-di-n-propylamine	-	-	UJ	CCAL out of control low.

Abbreviations
CCAL - continuing calibration standard
LOQ - limit of quantitation
SDG - sample delivery group

Qualifiers
U : Non-Detect at Reporting Limit
UJ : Non-Detected, Estimated result

ATTACHMENT A:

DATA EVALUATION CHECKLISTS

QA LEVEL 2A - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: Gary Zimmerman
Project Name: Landsburg Groundwater 2015-12
Project Number: 923-1000-002-R273
Reviewer: Jill Lamberts
Validation Date: 1/16/2016

Laboratory: ARI, Tukwila, WA
SDG #s: ASV5, ASV9, ASy3, ATA3, ATI2, ATA9, ATB0
Analytical Method (type and no.): Total Metals by EPA 200.8 and 6010C, Total Mercury by SW7470A
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐ Other

Work Plan or QAPP reference: Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site (Golder 1997)

Applicable Data Validation Guidance: National Functional Guidelines for Inorganic Review (USEPA 2014).

Sample Information: See Table 1 (attached)

Field/COC Information	**YES**	**NO**	**NA**	**COMMENTS**
a) Sampling dates noted?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample type indicated (grab/composite)?	☒	☐	☐	
e) Field QC noted?	☒	☐	☐	
f) Field parameters collected (note types)?	☒	☐	☐	pH, Temperature, Conductivity, Eh, Dissolved Oxygen, Turbidity
g) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
h) Were samples received in good condition?	☒	☐	☐	
i) Were the correct preservatives used?	☒	☐	☐	
j) Was the sample cooler temperature within QC limits?	☒	☐	☐	All coolers <6°C

Laboratory Case Narrative

a) Does the laboratory narrative indicate deficiencies?	☒	☐	☐	

Note Deficiencies:

- MS for Chromium not recovered due to elevated detection limits

General (reference QAPP or Method)	**YES**	**NO**	**NA**	**COMMENTS**
a) Were hold times met for sample pretreatment?	☒	☐	☐	
b) Were hold times met for sample analysis?	☒	☐	☐	
c) Was the correct method used?	☒	☐	☐	
d) Were appropriate reporting limits achieved?	☒	☐	☐	
e) Were any sample dilutions noted?	☐	☒	☐	
f) Were any matrix problems noted?	☒	☐	☐	See Note 1.

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were blanks performed at required frequency?	☒	☐	☐	
b) Were analytes detected in the prep blank(s)?	☐	☒	☐	
c) Were analytes detected in the field/equip blank(s)?	☐	☒	☐	

QA LEVEL 2A - INORGANIC DATA EVALUATION CHECKLIST

Laboratory Control Sample	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper analytes included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☒	☐	☐	

Matrix Spike/Matrix Spike Duplicate	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met (note %R)?	☐	☒	☐	See Note 1.
Recovery could not be calculated since sample contained high concentration of analyte?	☒	☐	☐	See Note 1.
b) Was MSD accuracy criteria met (note %R)?	☐	☐	☒	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met (note RPD)?	☐	☐	☒	

Duplicates (Lab and Field)	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?				LMW-7-1215 and LMW-7-1215-D
	☒	☐	☐	
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	☒	☐	☐	
d) Were lab dup. precision criteria met (note RPD)?	☒	☐	☐	

Overall Evaluation	YES	NO	NA	COMMENTS
a) Were there any other technical problems not previously addressed?	☐	☒	☐	
b) Checked for transcription errors?	☒	☐	☐	
c) Do target analytes fall within calibration ranges?	☒	☐	☐	
d) Data are acceptable and usable except as noted?	☒	☐	☐	

Comments/Notes:

1. MS %R out of control for several analytes. Per Guidelines, if the MS is out of control high, the parent sample is qualified estimated (J), if it is out of control low, the parent is qualified (J/UJ).
   - No qualification was applied for Cr MS that had no recovery due to raised reporting limits since the LCS was in control.
   - MS%R for calcium in SDG ASV5 flagged as H, 4X spike amount < sample amount. No action taken other than to note.

Data Qualification: See Table 2

****3/18/2016: Incorrect sample amount on LMW-11 VOC pages discovered. Lab sent revised pages and report tables were edited. ****

Definitions:

SDG: Sample Delivery Group	QC: Quality Control
COC: Chain of Custody	QAPP: Quality Assurance Project Plan
TAL: Target Analyte List	TOC: Total Organic Carbon
TDS: Total Dissolved Solids	TPH: Total Petroleum Hydrocarbons
% D: Percent Difference	RPD: Relative Percent Difference
LCS: Laboratory Control Sample	RSD: Relative Standard Deviation
MS/MSD: Matrix Spike/Matrix Spike Duplicate	ICP: Inductively Coupled Plasma
ICV: Initial Calibration Verification	AA: Atomic Absorption
CCV: Continuing Calibration Verification	ICB: Initial Calibration Blank

QA LEVEL 2A - INORGANIC DATA EVALUATION CHECKLIST

CRDL: Contract Required Detection Limit
CCB: Continuing Calibration Blank
RL: Reporting Limit
MDL: Method Detection Limit
SD: Serial Dilution
%R: Percent Recovery

QA LEVEL 2A - ORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates
Project Manager: Gary Zimmerman
Project Name: Landsburg Groundwater 2015-12
Project Number: 923-1000-002-R273
Reviewer: Jill Lamberts
Validation Date: 1/16/2016

Laboratory: ARI, Tukwila, WA
SDG #s: ASV5, ASV9, ASy3, ATA3, ATI2, ATA9, ATB0
Analytical Method (type and no.): SVOCs by SW8270D, VOCs by SW8260C, Pesticides/PCB y SW8081B, PCB by 8082A, and NWTPH-HCID,
Matrix: ☐ Air ☐ Soil/Sed. ☒ Water ☐ Waste ☐ Other

Work Plan or QAPP reference: Draft Interim Groundwater Monitoring Plan, Landsburg Mine Site (Golder 1997)

Applicable Data Validation Guidance: National Functional Guidelines for Organic Review (USEPA 2014).

Sample Information: See Table 1 (attached)

Field/COC Information	**YES**	**NO**	**NA**	**COMMENTS**
a) Sampling dates noted?	☒	☐	☐	
b) Sampling team indicated?	☒	☐	☐	
c) Sample location noted?	☒	☐	☐	
d) Sample type indicated (grab/composite)?	☒	☐	☐	
e) Field QC noted?	☒	☐	☐	
f) Field parameters collected (note types)?	☒	☐	☐	pH, Temperature, Conductivity, Eh, Dissolved Oxygen, Turbidity
g) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
h) Were samples received in good condition?	☒	☐	☐	See Note 7.
i) Were the correct preservatives used?	☒	☐	☐	
j) Was the sample cooler temperature within QC limits?	☒	☐	☐	

Laboratory Case Narrative

a) Does the laboratory narrative indicate deficiencies?	☒	☐	☐	

Note Deficiencies:

- VOCs CCALs out of control low for several analytes. Further discussion below.
- VOCs method blank contained several analytes. Further discussion below.
- VOCs LCS/LCSD out of control low for several analytes. Further discussion below.
- SVOCs method blank contained bis(2-Ethylhexyl)phthalate. Further discussion below
- SVOCs CCALs out of control high or low for several analytes. Further discussion below.
- SVOCs LCS/LCSD out of control high or low for several analytes. Further discussion below.
- PCBs LCS/LCSD RPD out of control. Further discussion below
- HCID surrogate o-Terphenyl out of control low for sample LMW-10-1215. Further discussion below.

General (reference QAPP or Method)	**YES**	**NO**	**NA**	**COMMENTS**
a) Were hold times met for sample pretreatment?	☒	☐	☐	
b) Were hold times met for sample analysis?	☒	☐	☐	
c) Was the correct method used?	☒	☐	☐	
d) Were appropriate reporting limits achieved?	☒	☐	☐	See Note 5.
e) Were any sample dilutions noted?	☐	☒	☐	
f) Were any matrix problems noted?	☒	☐	☐	See Note 5.

QA LEVEL 2A - ORGANIC DATA EVALUATION CHECKLIST

Blanks	**YES**	**NO**	**NA**	**COMMENTS**
a) Were analytes detected in the method blank(s)?	☒	☐	☐	
b) Was a method blank analysis performed according to the method used?	☒	☐	☐	
c) Was a method blank analysis performed for each instrument used for sample analyses?	☒	☐	☐	See Note 2.
d) Were analytes detected in the instrument blank(s)?	☐	☐	☒	
e) Were analytes detected in the field blank(s)?	☐	☐	☒	
f) Were analytes detected in the equipment blank(s)?	☒	☐	☐	See Note 2.
g) Were analytes detected in the trip blank(s)?	☒	☐	☐	See Note 2.
h) Were analytes detected in the storage blank(s)?	☐	☐	☒	

Surrogate (System Monitoring) Compounds	**YES**	**NO**	**NA**	**COMMENTS**
a) Were surrogate compounds added to all samples?	☒	☐	☐	
b) Were recoveries within control limits?	☐	☒	☐	See Note 6.
c) Were surrogate recoveries not calculated due to dilutions?	☐	☐	☒	
d) Were recoveries not calculated due to interference?	☐	☐	☒	

Laboratory Control Sample	**YES**	**NO**	**NA**	**COMMENTS**
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper compounds included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☐	☒	☐	See Note 4.

Matrix Spike/Matrix Spike Duplicate	**YES**	**NO**	**NA**	**COMMENTS**
a) Was MS accuracy criteria met (note %R)?	☐	☐	☒	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met (note %R)?	☐	☐	☒	
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met (note RPD)?	☐	☐	☒	

Duplicates	**YES**	**NO**	**NA**	**COMMENTS**
a) Were field duplicates collected (note original and duplicate sample names)?	☒	☐	☐	LMW-7-1215 and LMW-7-1215-D
b) Were field dup. precision criteria met (note RPD)?	☒	☐	☐	
c) Were lab duplicates analyzed (note original and duplicate samples)?	☐	☒	☐	
d) Were lab dup. precision criteria met (note RPD)?	☐	☒	☐	LCS/LCSD RPD evaluated – see Note 4.

Overall Evaluation	**YES**	**NO**	**NA**	**COMMENTS**
a) Were there any other technical problems not previously addressed?	☒	☐	☐	See Note 1 and 3.
b) Checked for transcription errors?	☒	☐	☐	
c) Do target analytes fall within calibration ranges?	☒	☐	☐	
d) Data are acceptable and usable except as noted?	☒	☐	☐	

QA LEVEL 2A - ORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

1. LMW-3-1215 was extracted and analyzed for SVOCs by lab twice. The first analysis contained low levels of bis(2-ethylhexyl)phthalate, likely due to lab contamination. The second analysis was non-detect for bis(2-ethylhexyl)phthalate. The second analysis is selected for reporting and the first analysis is designated "Do not report" (DNR).

2. Analytes were detected in the trip, equipment, and method blanks, as shown in the table below. Blank contamination was compared to sample results based on equivalent concentrations. When an analyte was detected in more than one blank associated with a given sample, the blank with the highest concentration was used for qualification purposes. Following Guidelines, when the blank contamination was less than the MRL and the associated sample result was greater than the MRL, no qualifications were required. If the blank contamination was less than the MRL and the associated sample result was also less than the MRL, the sample was qualified as non-detect (U) at the MRL. If the blank contamination was greater than the MRL and the sample concentration was <10X the blank contamination, the sample was qualified as estimated with a positive bias (J+)

Method	SDG	Blank ID	Blank Type	Analyte	Blank Concentration	Units
SW8270D	ATI2	MB-122315	Method	Bis(2-ethylhexyl)phthalate	7.1	ug/L
SW8260C	ASY3	Trip Blank 121615	Trip	Chloromethane	0.10 J	ug/L
SW8260C	ASY3	Trip Blank 121516	Trip	Acetone	2.2 J	ug/L
SW8260C	ASY3	EB-1215	Equipment	Toluene	0.05 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	Carbon Disulfide	0.10 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	Tetrachloroethene	0.05 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	1,3-Dichlorobenzene	0.04 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	1,4-Dichlorobenzene	0.05 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	1,3,5-Trimethylbenzene	0.02 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	n-Propylbenzene	0.03 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	tert-Butylbenzene	0.03 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	sec-Butylbenzene	0.03 J	ug/L
SW8260C	ASY3, ATA9, ASV5	MB-122315A	Method	n-Butylbenzene	0.05 J	ug/L
SW8260C	ATA9	Trip Blank 121715	Trip	Chloromethane	0.14 J	ug/L
SW8260C	ATA9	Trip Blank 121715	Trip	Acetone	4.6 J	ug/L
SW8260C	ATA9	Trip Blank 121715	Trip	Styrene	0.06 J	ug/L
SW8260C	ATA9	Trip Blank 121715	Trip	m,p-xylene	0.10 J	ug/L
SW8279D	ATA9	MB-122115	Method	Bis(2-ethylhexyl)phthalate	1.2 J	ug/L

3. Lab noted in case narrative that CCALs were out of control for several analytes. Per Guidelines, detected and non-detected analytes with CCALs out of control low were qualified as estimated (J/UJ). Detected analytes with CCALs out of control high were qualified as estimated (J). The following table lists the CCALs that were out of control low or high.

Method	SDG	Analyte	Out of Control Low or High?

Method	SDG	Analyte	Out of Control Low or High?
SW8270D	ATI2, ASY3, ATA9, ASV5	N-nitroso-Di-N-Propylamine	Low
SW8270D	ATI2, ASY3, ATA9, ASV5	2-Nitrophenol	High
SW8270D	ATI2, ASY3, ATA9, ASV5	2,4-Dinitrophenol	High
SW8270D	ATI2, ASY3, ATA9, ASV5	4-Nitrophenol	Low
SW8270D	ATI2, ASY3, ATA9, ASV5	2,6-Dinitrotoluene	High
SW8270D	ATI2, ASY3, ATA9, ASV5	2,4-Dinitrotoluene	High
SW8270D	ATI2, ASV5	4-Nitroaniline	High
SW8270D	ATI2, ASY3, ATA9, ASV5	Pentachlorophenol	High
SW8270D	ASY3, ATA9, ASV5	2,2'-Oxybis(1-Chloropropane)	Low
SW8270D	ASY3, ATA9	4-Chloroaniline	High
SW8270D	ASY3, ATA9	4,6-Dinitro-2-Methylphenol	High
SW8270D	ASV5	Isophorone	Low
SW8260C	ASY3, ATA9, ASV5	Carbon Tetrachloride	Low
SW8260C	ASY3, ATA9, ASV5	Dibromochloromethane	Low
SW8260C	ASY3, ATA9, ASV5	Bromoform	Low

4. LCS, LCSD and/or LCS/LCSD RPD out of control for several analytes. There is no guideline for LCS/LCSD specification for SVOCs and VOCs. If the LCS was in control, no qualification was applied. If the LCS and LCSD were out of control, the sample was qualified estimated (J/UJ). No qualifications were applied since the out of control analytes were already qualified due to CCALs being out of specification. For the PCBs LCS/LCSD RPD that was out of specification, no action was taken because sample results are consistent with historical values and all other QC was in control.

5. Limit of Quantitation (LOQ) was raised for gamma-BHC (Lindane) for sample LMW-5-1215, pesticide analysis (8081B) and flagged by lab as "Y". Qualify as "U".

6. Surrogate o-Terphenyl out of control low for HCID analysis of sample LMW-10-1215. Sample was qualified as UJ, but note that result is consistent with historical values.

7. SDG ASV5/ASV9: Lab notes that 2 of 6 VOC vials for Trip Blank had small bubbles. No action taken other than to note. The Lab prepared these samples.

Data Qualification: See Table 2

Definitions:

SDG: Sample Delivery Group
COC: Chain of Custody
VOC: Volatile Organic Compound
TCL: Target Compound List
% D: Percent Difference
LCS: Laboratory Control Sample
MS/MSD: Matrix Spike/Matrix Spike Duplicate
MDL: Method Detection Limit
%R: Percent Recovery
IC: Initial Calibration
RRF: Relative Response Factor
TCLP: Toxicity Characteristic Leaching Procedure
SPLP: Synthetic Precipitation Leaching Procedure
QC: Quality Control
QAPP: Quality Assurance Project Plan
SVOC: Semivolatile Organic Compound
PCB: Polychlorinated Biphenyl
RPD: Relative Percent Difference
RSD: Relative Standard Deviation
CRQL: Contract Required Quantitation Limit
RL: Reporting Limit
PEM: Performance Evaluation Mixture
CC: Continuing Calibration
SPCC: System Performance Check Compound
RT: Retention Time

QA LEVEL 2A - ORGANIC DATA EVALUATION CHECKLIST

ATTACHMENT B:
VALIDATED ANALYTICAL REPORTS

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AIA9	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G. Zimmerman, J Lamberts	
Client Project Name: Landsburg	
Client Project #: 923100002 R273	Samplers: JMiller / JLamberts

Page: 1	of 1
Date: 12/17/15	Ice Present?
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)

Sample ID	Date	Time	Matrix	No. Containers	VOC Client List	PCB(LL) Pesticides	SVOC-8270 Client List	TPH-NWTPH-Dx	TAML Total Metals	TAML Dissolved* Metals			Notes/Comments
Trip Blank	12/17/15	—	w	6	X								* Field Filtered (Please Analyze under Existing MSA between Golder & ARI)
LMW-10-1215		0930	w	17	X	X	X	X	X	Hold			
LMW-2-1215		1040	w	17	X	X	X	X	X				
LMW-4-1215		1200	w	17	X	X	X	X	X				
		end of sampling											

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
— Ecology EIM EDD * Client specific RLs + Analyte list Please CC JLamberts + GZimmerman@golder.com	Printed Name: J. Lamberts	Printed Name: Chris Atwell	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 12/17/15 1257	Date & Time: 12/17/15 1257	Date & Time:	Date & Time:

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

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-10-1215 SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:01

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	~~0.09~~	0.50	~~0.16 J~~	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Date Analyzed: 12/23/15 18:01

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	106%
d8-Toluene	99.9%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
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Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:22

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	~~0.09~~	0.50	~~0.19 J~~	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-2-1215 SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Date Analyzed: 12/23/15 18:22

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	102%
Bromofluorobenzene	99.2%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 18:43

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	~~0.09~~	0.50	~~0.39 J~~	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-4-1215 SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Date Analyzed: 12/23/15 18:43

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	102%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank
SAMPLE

Lab Sample ID: ATA9A
LIMS ID: 15-24742
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:08

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.14 J**	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	**Acetone**	**2.1**	**5.0**	**4.6 J**	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	**Styrene**	**0.05**	**0.20**	**0.06 J**	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	**m,p-Xylene**	**0.05**	**0.40**	**0.10 J**	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank SAMPLE

Lab Sample ID: ATA9A
LIMS ID: 15-24742
Matrix: Water
Date Analyzed: 12/23/15 14:08

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery	
d4-1,2-Dichloroethane	104%
d8-Toluene	99.9%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

Matrix: Water

Data Release Authorized:
Reported: 12/22/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result	
MB-121915 15-24743	Method Blank	12/19/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 81.3%	
ATA9B 15-24743	LMW-10-1215 HC ID: ---	12/19/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 41.0%	UJ UJ UJ
ATA9C 15-24744	LMW-2-1215 HC ID: ---	12/19/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 69.1%	
ATA9D 15-24745	LMW-4-1215 HC ID: ---	12/19/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 72.4%	

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
Page 1 of 2

Sample ID: LMW-10-1215 SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 21:06
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	UJ
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
Page 2 of 2

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Date Analyzed: 12/22/15 21:06

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	78.8%
d14-p-Terphenyl	90.4%	d4-1,2-Dichlorobenzene	72.8%
d5-Phenol	72.8%	2-Fluorophenol	72.0%
2,4,6-Tribromophenol	94.7%	d4-2-Chlorophenol	75.5%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 21:39
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	UJ
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Date Analyzed: 12/22/15 21:39

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.2%	2-Fluorobiphenyl	78.0%
d14-p-Terphenyl	90.8%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	68.3%	2-Fluorophenol	66.4%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	70.4%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
Page 1 of 2

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 22:11
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	UJ
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C
Page 2 of 2

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Date Analyzed: 12/22/15 22:11

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.4%	2-Fluorobiphenyl	76.0%
d14-p-Terphenyl	88.4%	d4-1,2-Dichlorobenzene	66.8%
d5-Phenol	67.7%	2-Fluorophenol	66.4%
2,4,6-Tribromophenol	90.7%	d4-2-Chlorophenol	70.1%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-10-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:05
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	107%
Tetrachlorometaxylene	80.5%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-2-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:23
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	108%
Tetrachlorometaxylene	81.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-4-1215**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 23:41
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.099	< 0.099 Y U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	122%
Tetrachlorometaxylene	81.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 08:21
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	74.5%
Tetrachlorometaxylene	58.0%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 08:42
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.8%
Tetrachlorometaxylene	58.0%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 09:04
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	72.2%
Tetrachlorometaxylene	52.5%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-10-1215
SAMPLE

Lab Sample ID: ATA9B
LIMS ID: 15-24743
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**6,950**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**3,120**	
3010A	12/21/15	6010C	01/04/16	7439-96-5	Manganese	0.11	20	20	U
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**1,320**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**88,400**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-2-1215
SAMPLE

Lab Sample ID: ATA9C
LIMS ID: 15-24744
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**114,000**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	**7439-89-6**	**Iron**	3.6	200	**460**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**70,600**	
3010A	12/21/15	6010C	01/04/16	**7439-96-5**	**Manganese**	0.11	20	**232**	
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**3,650**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**21,000**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-4-1215
SAMPLE

Lab Sample ID: ATA9D
LIMS ID: 15-24745
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ATA9-Golder Associates
Project: Landsburg
9231000002 R273
Date Sampled: 12/17/15
Date Received: 12/18/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	01/04/16	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	01/04/16	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	01/04/16	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	01/04/16	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	01/04/16	**7440-70-2**	**Calcium**	1.2	500	**114,000**	
3010A	12/21/15	6010C	01/04/16	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	01/04/16	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	01/04/16	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	01/04/16	**7439-89-6**	**Iron**	3.6	200	**1,010**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	01/04/16	**7439-95-4**	**Magnesium**	7.0	1,000	**70,200**	
3010A	12/21/15	6010C	01/04/16	**7439-96-5**	**Manganese**	0.11	20	**190**	
3010A	12/21/15	6010C	01/04/16	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	01/04/16	**7440-09-7**	**Potassium**	15.0	500	**3,820**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	01/04/16	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	01/04/16	**7440-23-5**	**Sodium**	4.2	500	**24,500**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	01/04/16	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	01/04/16	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/17/15
Page 1 of 1

QC Report No: ATB0-Golder Associates
Project: Landsburg
9231000002 R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-10-1215 ATB0A 15-24761	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-2-1215 ATB0B 15-24762	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-4-1215 ATB0C 15-24763	12/17/15	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: A543	Turn-around Requested: Standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G Zimmerman, J. Lamberts	
Client Project Name: Lands Berg	
Client Project #: 923/100002, R273	Samplers: J. Lamberts/J. Miller

Page: 1 of 1	
Date: 12/16/2015	Ice Present?
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)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: VOC Client List	PCB (LL) Pesticides	SVOC 8270 Client List	TPH HCID	TAML Total Metals	TAML Dissolved Metals			Notes/Comments
Trip Blank 12615	12/16/15	—	W	3									~~AF~~ield Filtered
LMW-3-1215		0930	W	17	X	X	X	X	X	~~Hold~~			Please Analyze under Existing MSA between Golder + ARI
EB-1215		0945	W	17	X	X	X	X	X				
LMW-5-1215		1120	W	17	X	X	X	X	X				
LMW-8-1215		1210	W	17	X	X	X	X	X				
LMW-9-1215	↓	1330	W	17	X	X	X	X	X	↓			

Comments/Special Instructions - Ecology EIMEDD *Client Specific RLs + Analyte list Please CC jlamberts + gzimmerman@golder.com	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: JLamberts	Printed Name: Tyler Rankin	Printed Name:	Printed Name:
	Company: Golder	Company: ARI	Company:	Company:
	Date & Time: 12/16/2015 1508	Date & Time: 12-16-15 1508	Date & Time:	Date & Time:

QA/QC J. Lamberts 1/7/2016

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

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ATI2A
LIMS ID: 15-25006
Matrix: Water
Data Release Authorized:
Reported: 12/29/15

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/28/15 15:04
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ATI2A
LIMS ID: 15-25006
Matrix: Water
Date Analyzed: 12/28/15 15:04

QC Report No: ATI2-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.0%	2-Fluorobiphenyl	70.4%
d14-p-Terphenyl	84.0%	d4-1,2-Dichlorobenzene	63.2%
d5-Phenol	62.9%	2-Fluorophenol	61.9%
2,4,6-Tribromophenol	87.2%	d4-2-Chlorophenol	65.6%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

DNR all results on this page.

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 18:21
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-3-1215
SAMPLE

DNR all results on this page. Except for * compounds

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/22/15 18:21

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**2.1**	**3.0**	**11**
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U *
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U *
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U *
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	72.0%	2-Fluorobiphenyl	83.2%
d14-p-Terphenyl	96.8%	d4-1,2-Dichlorobenzene	75.6%
d5-Phenol	73.6%	2-Fluorophenol	72.3%
2,4,6-Tribromophenol	107%	d4-2-Chlorophenol	77.9%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 18:54
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Date Analyzed: 12/22/15 18:54

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.6%	2-Fluorobiphenyl	78.0%
d14-p-Terphenyl	92.4%	d4-1,2-Dichlorobenzene	69.6%
d5-Phenol	71.2%	2-Fluorophenol	69.3%
2,4,6-Tribromophenol	97.6%	d4-2-Chlorophenol	74.1%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 19:27
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Date Analyzed: 12/22/15 19:27

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	69.2%	2-Fluorobiphenyl	79.6%
d14-p-Terphenyl	93.6%	d4-1,2-Dichlorobenzene	71.2%
d5-Phenol	71.5%	2-Fluorophenol	70.9%
2,4,6-Tribromophenol	98.4%	d4-2-Chlorophenol	74.4%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 20:00
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Date Analyzed: 12/22/15 20:00

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.4%	2-Fluorobiphenyl	75.6%
d14-p-Terphenyl	88.4%	d4-1,2-Dichlorobenzene	68.8%
d5-Phenol	69.1%	2-Fluorophenol	68.3%
2,4,6-Tribromophenol	92.8%	d4-2-Chlorophenol	71.7%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 12/23/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/21/15
Date Analyzed: 12/22/15 20:33
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	
100-02-7	4-Nitrophenol	1.8	10	< 10 U	UJ
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Date Analyzed: 12/22/15 20:33

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.6%	2-Fluorobiphenyl	77.6%
d14-p-Terphenyl	89.6%	d4-1,2-Dichlorobenzene	69.2%
d5-Phenol	70.9%	2-Fluorophenol	69.3%
2,4,6-Tribromophenol	93.9%	d4-2-Chlorophenol	72.8%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: Trip Blank 121615
SAMPLE

Lab Sample ID: ASY3A
LIMS ID: 15-24678
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:29

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	**Chloromethane**	**0.09**	**0.50**	**0.10 J**
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	**Acetone**	**2.1**	**5.0**	**2.2 J**
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank 121615
SAMPLE

Lab Sample ID: ASY3A
LIMS ID: 15-24678
Matrix: Water
Date Analyzed: 12/23/15 14:29

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.7%
Bromofluorobenzene	99.3%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 14:50

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Date Analyzed: 12/23/15 14:50

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	98.4%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:11

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	**Toluene**	**0.04**	**0.20**	**0.05 J**	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Date Analyzed: 12/23/15 15:11

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.8%
Bromofluorobenzene	98.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:33

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.09	0.50	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U
75-00-3	Chloroethane	0.09	0.20	< 0.20 U
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U
67-64-1	Acetone	2.1	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U
67-66-3	Chloroform	0.03	0.20	< 0.20 U
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U
78-93-3	2-Butanone	0.81	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U
71-43-2	Benzene	0.03	0.20	< 0.20 U
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U
75-25-2	Bromoform	0.06	0.20	< 0.20 U UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U
108-88-3	Toluene	0.04	0.20	< 0.20 U
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U
100-42-5	Styrene	0.05	0.20	< 0.20 U
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U
95-47-6	o-Xylene	0.03	0.20	< 0.20 U
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U
107-02-8	Acrolein	2.5	2.5	< 2.5 U
74-88-4	Iodomethane	0.23	0.50	< 0.50 U
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Date Analyzed: 12/23/15 15:33

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	99.4%
Bromofluorobenzene	101%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 15:54

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	~~0.09~~	**0.50**	~~0.24 J~~	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Date Analyzed: 12/23/15 15:54

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:15

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	**Chloromethane**	~~0.09~~	0.50	~~0.17 J~~	< 0.50 U
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Date Analyzed: 12/23/15 16:15

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	105%
d8-Toluene	99.2%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 21:35
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	110%
Tetrachlorometaxylene	74.8%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 21:53
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	87.0%
Tetrachlorometaxylene	76.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:11
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.31	< 0.31 Y U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	78.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:29
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	84.2%
Tetrachlorometaxylene	72.5%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-9-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/22/15
Date Analyzed: 01/04/16 22:47
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	70.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 06:33
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.8%
Tetrachlorometaxylene	61.5%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 06:54
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	51.8%
Tetrachlorometaxylene	55.8%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:16
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.8%
Tetrachlorometaxylene	62.5%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:37
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.5%
Tetrachlorometaxylene	61.8%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Date Extracted: 12/23/15
Date Analyzed: 12/31/15 07:59
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	59.8%
Tetrachlorometaxylene	42.0%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ASY3-Golder Associates
Project: Lands Burg
92310000002.R273

Matrix: Water

Data Release Authorized: MW
Reported: 12/22/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-121815 15-24679	Method Blank	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 70.1%
ASY3B 15-24679	LMW-3-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 58.2%
ASY3C 15-24680	EB-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 73.8%
ASY3D 15-24681	LMW-5-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 80.2%
ASY3E 15-24682	LMW-8-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 59.4%
ASY3F 15-24683	LMW-9-1215 HC ID: ---	12/18/15	12/21/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 61.2%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-3-1215
SAMPLE

Lab Sample ID: ASY3B
LIMS ID: 15-24679
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**38,900**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**16,500**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**79**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**1,790**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**10,900**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: EB-1215
SAMPLE

Lab Sample ID: ASY3C
LIMS ID: 15-24680
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-70-2	Calcium	1.2	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	7439-89-6	Iron	3.6	200	200	U
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	7439-95-4	Magnesium	7.0	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7439-96-5	Manganese	0.11	20	20	U
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	7440-09-7	Potassium	15.0	500	500	U
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-23-5	Sodium	4.2	500	500	U
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-5-1215
SAMPLE

Lab Sample ID: ASY3D
LIMS ID: 15-24681
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**90,900**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**280**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**52,000**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**236**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**2,680**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**16,500**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-8-1215
SAMPLE

Lab Sample ID: ASY3E
LIMS ID: 15-24682
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**47,700**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**8,260**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**26,500**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**407**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**1,750**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**10,000**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-9-1215
SAMPLE

Lab Sample ID: ASY3F
LIMS ID: 15-24683
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASY3-Golder Associates
Project: Landsburg
92310000002.R273
Date Sampled: 12/16/15
Date Received: 12/16/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/21/15	6010C	12/24/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/23/15	200.8	12/28/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/23/15	200.8	12/28/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/21/15	6010C	12/24/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/21/15	6010C	12/24/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/21/15	6010C	12/24/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/21/15	6010C	12/24/15	**7440-70-2**	**Calcium**	1.2	500	**82,400**	
3010A	12/21/15	6010C	12/24/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/21/15	6010C	12/24/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/21/15	6010C	12/24/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/21/15	6010C	12/24/15	**7439-89-6**	**Iron**	3.6	200	**1,530**	
200.8	12/23/15	200.8	12/28/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/21/15	6010C	12/24/15	**7439-95-4**	**Magnesium**	7.0	1,000	**46,200**	
3010A	12/21/15	6010C	12/24/15	**7439-96-5**	**Manganese**	0.11	20	**171**	
3010A	12/21/15	6010C	12/24/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/21/15	6010C	12/24/15	**7440-09-7**	**Potassium**	15.0	500	**2,560**	
200.8	12/23/15	200.8	12/28/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/21/15	6010C	12/24/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/21/15	6010C	12/24/15	**7440-23-5**	**Sodium**	4.2	500	**15,900**	
200.8	12/23/15	200.8	12/28/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/21/15	6010C	12/24/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/21/15	6010C	12/24/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/16/15

QC Report No: ATA3-Golder Associates
Project: Lands Berg
9231000002.R273

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-3-1215 ATA3A 15-24732	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
EB-1215 ATA3B 15-24733	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-5-1215 ATA3C 15-24734	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-8-1215 ATA3D 15-24735	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-9-1215 ATA3E 15-24736	12/16/15	Water	12/23/15 12/24/15	20.0	20.0 U
MB-122315 Method Blank	NA	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

Chain of Custody Record & Laboratory Analysis Request

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

ARI Assigned Number: ASV5	Turn-around Requested: standard
ARI Client Company: Golder	Phone: 425-883-0777
Client Contact: G. Zimmerman J. Lamberts	
Client Project Name: Landsburg	
Client Project #: 923100002	Samplers: Lamberts Miller
Page: 1 of 1	
Date: 12/15/15	Ice Present? Yes
No. of Coolers: 5	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	VOC Client List	PCB (LL) Pesticides	SVOC 8270 Client List	TPH HCID	TAML -Total Metals	TAML ✱ -Diss Metals			Notes/Comments: ✱ Field Filtered 0.45µm Filter (Please analyze under Existing MSA)
Trip Blank-121515	12/15/15	—	W	6	X								
LMW-11-1215	↓	1000	W	17	X	X	X	X	X	Hold			
LMW-6-1215	↓	1205	W	17	X	X	X	X	X	↓			
LMW-7-1215	↓	1350	W	17	X	X	X	X	X	↓			
LMW-7-1215-D	↓	1355	W	17	X	X	X	X	X	↓			

Comments/Special Instructions:
-Ecology EIM EDD
✱Client Specific RLs + Analyte List✱
Pls cc jlamberts + gzimmerman@golder.com

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	[signature]	[signature]		
Printed Name:	J. Lamberts	Chris Atwell		
Company:	Golder	ARI		
Date & Time:	12/15/15 1525	12/15/15 1525		

QA/QC J. Lamberts 1/17/2016

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-11-1215**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 18:36
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	70.2%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 18:54
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	97.2%
Tetrachlorometaxylene	70.2%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized: MW
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 19:12
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	93.0%
Tetrachlorometaxylene	66.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Pesticides/PCB by GC/ECD Method SW8081B **Sample ID: LMW-7-1215-D**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/05/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/18/15
Date Analyzed: 01/04/16 19:30
Instrument/Analyst: ECD6/YZ
GPC Cleanup: No
Sulfur Cleanup: No
Florisil Cleanup: No

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

CAS Number	Analyte	DL	LOQ	Result
319-84-6	alpha-BHC	0.0085	0.025	< 0.025 U
319-85-7	beta-BHC	0.0098	0.025	< 0.025 U
319-86-8	delta-BHC	0.0087	0.025	< 0.025 U
58-89-9	gamma-BHC (Lindane)	0.016	0.025	< 0.025 U
76-44-8	Heptachlor	0.011	0.025	< 0.025 U
309-00-2	Aldrin	0.010	0.025	< 0.025 U
1024-57-3	Heptachlor Epoxide	0.0079	0.050	< 0.050 U
959-98-8	Endosulfan I	0.0089	0.025	< 0.025 U
60-57-1	Dieldrin	0.017	0.050	< 0.050 U
72-55-9	4,4'-DDE	0.018	0.050	< 0.050 U
72-20-8	Endrin	0.017	0.050	< 0.050 U
33213-65-9	Endosulfan II	0.014	0.050	< 0.050 U
72-54-8	4,4'-DDD	0.019	0.050	< 0.050 U
1031-07-8	Endosulfan Sulfate	0.024	0.050	< 0.050 U
50-29-3	4,4'-DDT	0.017	0.050	< 0.050 U
72-43-5	Methoxychlor	0.074	0.25	< 0.25 U
53494-70-5	Endrin Ketone	0.015	0.050	< 0.050 U
7421-93-4	Endrin Aldehyde	0.016	0.050	< 0.050 U
5103-74-2	trans-Chlordane	0.0082	0.025	< 0.025 U
5103-71-9	cis-Chlordane	0.0082	0.025	< 0.025 U
8001-35-2	Toxaphene	0.22	1.2	< 1.2 U

Reported in µg/L (ppb)

Pest/PCB Surrogate Recovery

Decachlorobiphenyl	114%
Tetrachlorometaxylene	77.0%

This analyte (CAS registry No. 5103-74-2) is named trans-Chlordane in EPA Method 8081B(Feb 2007). It has also been named beta-Chlordane.

$ This analyte (CAS registry No. 5103-71-9) is named cis-Chlordane in EPA Method 8081B(Feb 2007). It has also been named alpha-Chlordane.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank-121515
SAMPLE

Lab Sample ID: ASV5A
LIMS ID: 15-24544
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 13:46

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: Trip Blank-121515
SAMPLE

Lab Sample ID: ASV5A
LIMS ID: 15-24544
Matrix: Water
Date Analyzed: 12/23/15 13:46

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.8%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

3/18/2016: Lab error noted and revised report pages sent. DNR results on this page

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:36

Sample Amount: 2.33 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.41	2.1	< 2.1 U	
74-83-9	Bromomethane	1.1	4.3	< 4.3 U	
75-01-4	Vinyl Chloride	0.25	0.43	< 0.43 U	
75-00-3	Chloroethane	0.37	0.86	< 0.86 U	
75-09-2	Methylene Chloride	2.1	4.3	< 4.3 U	
67-64-1	Acetone	8.8	21	< 21 U	
75-15-0	Carbon Disulfide	0.16	0.86	< 0.86 U	
75-35-4	1,1-Dichloroethene	0.23	0.86	< 0.86 U	
75-34-3	1,1-Dichloroethane	0.23	0.86	< 0.86 U	
156-60-5	trans-1,2-Dichloroethene	0.21	0.86	< 0.86 U	
156-59-2	cis-1,2-Dichloroethene	0.18	0.86	< 0.86 U	
67-66-3	Chloroform	0.12	0.86	< 0.86 U	
107-06-2	1,2-Dichloroethane	0.31	0.86	< 0.86 U	
78-93-3	2-Butanone	3.5	21	< 21 U	
71-55-6	1,1,1-Trichloroethane	0.18	0.86	< 0.86 U	
56-23-5	Carbon Tetrachloride	0.19	0.86	< 0.86 U	UJ
108-05-4	Vinyl Acetate	0.30	0.86	< 0.86 U	
75-27-4	Bromodichloromethane	0.22	0.86	< 0.86 U	
78-87-5	1,2-Dichloropropane	0.15	0.86	< 0.86 U	
10061-01-5	cis-1,3-Dichloropropene	0.26	0.86	< 0.86 U	
79-01-6	Trichloroethene	0.21	0.86	< 0.86 U	
124-48-1	Dibromochloromethane	0.21	0.86	< 0.86 U	UJ
79-00-5	1,1,2-Trichloroethane	0.55	0.86	< 0.86 U	
71-43-2	Benzene	0.11	0.86	< 0.86 U	
10061-02-6	trans-1,3-Dichloropropene	0.35	0.86	< 0.86 U	
110-75-8	2-Chloroethylvinylether	1.1	2.1	< 2.1 U	
75-25-2	Bromoform	0.27	0.86	< 0.86 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.2	11	< 11 U	
591-78-6	2-Hexanone	3.9	21	< 21 U	
127-18-4	Tetrachloroethene	0.20	0.86	< 0.86 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	0.43	< 0.43 U	
108-88-3	Toluene	0.17	0.86	< 0.86 U	
108-90-7	Chlorobenzene	0.10	0.86	< 0.86 U	
100-41-4	Ethylbenzene	0.16	0.86	< 0.86 U	
100-42-5	Styrene	0.19	0.86	< 0.86 U	
75-69-4	Trichlorofluoromethane	0.16	0.86	< 0.86 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.18	0.86	< 0.86 U	
179601-23-1	m,p-Xylene	0.22	1.7	< 1.7 U	
95-47-6	o-Xylene	0.15	0.86	< 0.86 U	
95-50-1	1,2-Dichlorobenzene	0.16	0.86	< 0.86 U	
541-73-1	1,3-Dichlorobenzene	0.16	0.86	< 0.86 U	
106-46-7	1,4-Dichlorobenzene	0.17	0.86	< 0.86 U	
107-02-8	Acrolein	11	11	< 11 U	
74-88-4	Iodomethane	0.97	2.1	< 2.1 U	
107-13-1	Acrylonitrile	2.6	4.3	< 4.3 U	
563-58-6	1,1-Dichloropropene	0.15	0.43	< 0.43 U	
74-95-3	Dibromomethane	0.62	0.86	< 0.86 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.17	0.86	< 0.86 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.16	2.1	< 2.1 U	
96-18-4	1,2,3-Trichloropropane	0.56	0.86	< 0.86 U	

3/18/2016: Lab error noted and revised report pages sent. DNR results on this page

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/23/15 16:36

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	1.4	4.3	< 4.3 U
108-67-8	1,3,5-Trimethylbenzene	0.06	0.86	< 0.86 U
95-63-6	1,2,4-Trimethylbenzene	0.10	0.86	< 0.86 U
87-68-3	Hexachlorobutadiene	0.32	0.86	< 0.86 U
106-93-4	1,2-Dibromoethane	0.32	0.43	< 0.43 U
74-97-5	Bromochloromethane	0.26	0.86	< 0.86 U
594-20-7	2,2-Dichloropropane	0.22	0.43	< 0.43 U
142-28-9	1,3-Dichloropropane	0.27	0.43	< 0.43 U
98-82-8	Isopropylbenzene	0.09	0.86	< 0.86 U
103-65-1	n-Propylbenzene	0.10	0.86	< 0.86 U
108-86-1	Bromobenzene	0.26	0.86	< 0.86 U
95-49-8	2-Chlorotoluene	0.10	0.43	< 0.43 U
106-43-4	4-Chlorotoluene	0.07	0.86	< 0.86 U
98-06-6	tert-Butylbenzene	0.11	0.86	< 0.86 U
135-98-8	sec-Butylbenzene	0.10	0.86	< 0.86 U
99-87-6	4-Isopropyltoluene	0.11	0.43	< 0.43 U
104-51-8	n-Butylbenzene	0.11	0.86	< 0.86 U
120-82-1	1,2,4-Trichlorobenzene	0.46	2.1	< 2.1 U
91-20-3	Naphthalene	0.51	2.1	< 2.1 U
87-61-6	1,2,3-Trichlorobenzene	0.47	0.86	< 0.86 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	100%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

3/18/2016: Revised pages

QA/QC J. Lamberts 3/18/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 03/18/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:36

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.20	< 0.20 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	1.0	< 1.0 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	5.0	< 5.0 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.20	< 0.20 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	5.0	< 5.0 U	
74-88-4	Iodomethane	0.23	1.0	< 1.0 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.20	< 0.20 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.50	< 0.50 U	

ASV5 00032Rev

3/18/2016: Revised pages

QA/QC J. Lamberts 3/18/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/23/15 16:36

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.50	< 0.50 U
106-93-4	1,2-Dibromoethane	0.07	0.20	< 0.20 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.20	< 0.20 U
142-28-9	1,3-Dichloropropane	0.06	0.20	< 0.20 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.20	< 0.20 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.20	< 0.20 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.50	< 0.50 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	100%
Bromofluorobenzene	98.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ASVS:00033Rev

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 16:57

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Date Analyzed: 12/23/15 16:57

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	101%
Bromofluorobenzene	96.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 17:18

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Date Analyzed: 12/23/15 17:18

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	99.5%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 12/30/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Instrument/Analyst: NT2/LH
Date Analyzed: 12/23/15 17:39

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	DL	LOQ	Result	
74-87-3	Chloromethane	0.09	0.50	< 0.50 U	
74-83-9	Bromomethane	0.25	1.0	< 1.0 U	
75-01-4	Vinyl Chloride	0.06	0.10	< 0.10 U	
75-00-3	Chloroethane	0.09	0.20	< 0.20 U	
75-09-2	Methylene Chloride	0.48	1.0	< 1.0 U	
67-64-1	Acetone	2.1	5.0	< 5.0 U	
75-15-0	Carbon Disulfide	0.04	0.20	< 0.20 U	
75-35-4	1,1-Dichloroethene	0.05	0.20	< 0.20 U	
75-34-3	1,1-Dichloroethane	0.05	0.20	< 0.20 U	
156-60-5	trans-1,2-Dichloroethene	0.05	0.20	< 0.20 U	
156-59-2	cis-1,2-Dichloroethene	0.04	0.20	< 0.20 U	
67-66-3	Chloroform	0.03	0.20	< 0.20 U	
107-06-2	1,2-Dichloroethane	0.07	0.20	< 0.20 U	
78-93-3	2-Butanone	0.81	5.0	< 5.0 U	
71-55-6	1,1,1-Trichloroethane	0.04	0.20	< 0.20 U	
56-23-5	Carbon Tetrachloride	0.04	0.20	< 0.20 U	UJ
108-05-4	Vinyl Acetate	0.07	0.20	< 0.20 U	
75-27-4	Bromodichloromethane	0.05	0.20	< 0.20 U	
78-87-5	1,2-Dichloropropane	0.04	0.20	< 0.20 U	
10061-01-5	cis-1,3-Dichloropropene	0.06	0.20	< 0.20 U	
79-01-6	Trichloroethene	0.05	0.20	< 0.20 U	
124-48-1	Dibromochloromethane	0.05	0.20	< 0.20 U	UJ
79-00-5	1,1,2-Trichloroethane	0.13	0.20	< 0.20 U	
71-43-2	Benzene	0.03	0.20	< 0.20 U	
10061-02-6	trans-1,3-Dichloropropene	0.08	0.20	< 0.20 U	
110-75-8	2-Chloroethylvinylether	0.25	0.50	< 0.50 U	
75-25-2	Bromoform	0.06	0.20	< 0.20 U	UJ
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.97	2.5	< 2.5 U	
591-78-6	2-Hexanone	0.90	5.0	< 5.0 U	
127-18-4	Tetrachloroethene	0.05	0.20	< 0.20 U	
79-34-5	1,1,2,2-Tetrachloroethane	0.06	0.10	< 0.10 U	
108-88-3	Toluene	0.04	0.20	< 0.20 U	
108-90-7	Chlorobenzene	0.02	0.20	< 0.20 U	
100-41-4	Ethylbenzene	0.04	0.20	< 0.20 U	
100-42-5	Styrene	0.05	0.20	< 0.20 U	
75-69-4	Trichlorofluoromethane	0.04	0.20	< 0.20 U	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.04	0.20	< 0.20 U	
179601-23-1	m,p-Xylene	0.05	0.40	< 0.40 U	
95-47-6	o-Xylene	0.03	0.20	< 0.20 U	
95-50-1	1,2-Dichlorobenzene	0.04	0.20	< 0.20 U	
541-73-1	1,3-Dichlorobenzene	0.04	0.20	< 0.20 U	
106-46-7	1,4-Dichlorobenzene	0.04	0.20	< 0.20 U	
107-02-8	Acrolein	2.5	2.5	< 2.5 U	
74-88-4	Iodomethane	0.23	0.50	< 0.50 U	
107-13-1	Acrylonitrile	0.60	1.0	< 1.0 U	
563-58-6	1,1-Dichloropropene	0.03	0.10	< 0.10 U	
74-95-3	Dibromomethane	0.14	0.20	< 0.20 U	
630-20-6	1,1,1,2-Tetrachloroethane	0.04	0.20	< 0.20 U	
96-12-8	1,2-Dibromo-3-chloropropane	0.04	0.50	< 0.50 U	
96-18-4	1,2,3-Trichloropropane	0.13	0.20	< 0.20 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by P&T GC/MS-Method SW8260C

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Date Analyzed: 12/23/15 17:39

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
110-57-6	trans-1,4-Dichloro-2-butene	0.32	1.0	< 1.0 U
108-67-8	1,3,5-Trimethylbenzene	0.02	0.20	< 0.20 U
95-63-6	1,2,4-Trimethylbenzene	0.02	0.20	< 0.20 U
87-68-3	Hexachlorobutadiene	0.07	0.20	< 0.20 U
106-93-4	1,2-Dibromoethane	0.07	0.10	< 0.10 U
74-97-5	Bromochloromethane	0.06	0.20	< 0.20 U
594-20-7	2,2-Dichloropropane	0.05	0.10	< 0.10 U
142-28-9	1,3-Dichloropropane	0.06	0.10	< 0.10 U
98-82-8	Isopropylbenzene	0.02	0.20	< 0.20 U
103-65-1	n-Propylbenzene	0.02	0.20	< 0.20 U
108-86-1	Bromobenzene	0.06	0.20	< 0.20 U
95-49-8	2-Chlorotoluene	0.02	0.10	< 0.10 U
106-43-4	4-Chlorotoluene	0.02	0.20	< 0.20 U
98-06-6	tert-Butylbenzene	0.03	0.20	< 0.20 U
135-98-8	sec-Butylbenzene	0.02	0.20	< 0.20 U
99-87-6	4-Isopropyltoluene	0.03	0.10	< 0.10 U
104-51-8	n-Butylbenzene	0.02	0.20	< 0.20 U
120-82-1	1,2,4-Trichlorobenzene	0.11	0.50	< 0.50 U
91-20-3	Naphthalene	0.12	0.50	< 0.50 U
87-61-6	1,2,3-Trichlorobenzene	0.11	0.20	< 0.20 U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	100%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 15:08
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	UJ
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	UJ
100-02-7	4-Nitrophenol	1.8	10	< 10 U	
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Date Analyzed: 12/17/15 15:08

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.6%	2-Fluorobiphenyl	82.8%
d14-p-Terphenyl	94.0%	d4-1,2-Dichlorobenzene	73.6%
d5-Phenol	67.5%	2-Fluorophenol	68.8%
2,4,6-Tribromophenol	104%	d4-2-Chlorophenol	74.9%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 15:42
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	UJ
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	UJ
100-02-7	4-Nitrophenol	1.8	10	< 10 U	
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Date Analyzed: 12/17/15 15:42

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	84.8%
d14-p-Terphenyl	94.8%	d4-1,2-Dichlorobenzene	72.8%
d5-Phenol	71.7%	2-Fluorophenol	70.7%
2,4,6-Tribromophenol	104%	d4-2-Chlorophenol	76.0%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 16:15
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	UJ
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	UJ
100-02-7	4-Nitrophenol	1.8	10	< 10 U	
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Date Analyzed: 12/17/15 16:15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.2%	2-Fluorobiphenyl	76.4%
d14-p-Terphenyl	74.4%	d4-1,2-Dichlorobenzene	66.8%
d5-Phenol	65.9%	2-Fluorophenol	67.2%
2,4,6-Tribromophenol	94.9%	d4-2-Chlorophenol	71.5%

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized: MW
Reported: 12/18/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/16/15
Date Analyzed: 12/17/15 16:48
Instrument/Analyst: NT6/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result	
108-95-2	Phenol	0.27	1.0	< 1.0 U	
111-44-4	Bis-(2-Chloroethyl) Ether	0.25	1.0	< 1.0 U	
95-57-8	2-Chlorophenol	0.22	1.0	< 1.0 U	
541-73-1	1,3-Dichlorobenzene	0.27	1.0	< 1.0 U	
106-46-7	1,4-Dichlorobenzene	0.27	1.0	< 1.0 U	
100-51-6	Benzyl Alcohol	0.55	2.0	< 2.0 U	
95-50-1	1,2-Dichlorobenzene	0.25	1.0	< 1.0 U	
95-48-7	2-Methylphenol	0.21	1.0	< 1.0 U	
108-60-1	2,2'-Oxybis(1-Chloropropane)	0.24	1.0	< 1.0 U	UJ
106-44-5	4-Methylphenol	0.47	2.0	< 2.0 U	
621-64-7	N-Nitroso-Di-N-Propylamine	0.27	1.0	< 1.0 U	UJ
67-72-1	Hexachloroethane	0.30	2.0	< 2.0 U	
98-95-3	Nitrobenzene	0.25	1.0	< 1.0 U	
78-59-1	Isophorone	0.42	1.0	< 1.0 U	UJ
88-75-5	2-Nitrophenol	0.26	3.0	< 3.0 U	
105-67-9	2,4-Dimethylphenol	1.1	3.0	< 3.0 U	
65-85-0	Benzoic Acid	3.9	20	< 20 U	
111-91-1	bis(2-Chloroethoxy) Methane	0.24	1.0	< 1.0 U	
120-83-2	2,4-Dichlorophenol	1.1	3.0	< 3.0 U	
120-82-1	1,2,4-Trichlorobenzene	0.25	1.0	< 1.0 U	
91-20-3	Naphthalene	0.25	1.0	< 1.0 U	
106-47-8	4-Chloroaniline	1.7	5.0	< 5.0 U	
87-68-3	Hexachlorobutadiene	0.34	3.0	< 3.0 U	
59-50-7	4-Chloro-3-methylphenol	1.1	3.0	< 3.0 U	
91-57-6	2-Methylnaphthalene	0.30	1.0	< 1.0 U	
77-47-4	Hexachlorocyclopentadiene	1.1	5.0	< 5.0 U	
88-06-2	2,4,6-Trichlorophenol	1.0	3.0	< 3.0 U	
95-95-4	2,4,5-Trichlorophenol	1.1	5.0	< 5.0 U	
91-58-7	2-Chloronaphthalene	0.25	1.0	< 1.0 U	
88-74-4	2-Nitroaniline	1.5	3.0	< 3.0 U	
131-11-3	Dimethylphthalate	0.26	1.0	< 1.0 U	
208-96-8	Acenaphthylene	0.27	1.0	< 1.0 U	
99-09-2	3-Nitroaniline	1.5	3.0	< 3.0 U	
83-32-9	Acenaphthene	0.25	1.0	< 1.0 U	
51-28-5	2,4-Dinitrophenol	3.4	20	< 20 U	UJ
100-02-7	4-Nitrophenol	1.8	10	< 10 U	
132-64-9	Dibenzofuran	0.31	1.0	< 1.0 U	
606-20-2	2,6-Dinitrotoluene	1.1	3.0	< 3.0 U	
121-14-2	2,4-Dinitrotoluene	1.1	3.0	< 3.0 U	

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Semivolatiles by SW8270D GC/MS
Extraction Method: SW3520C

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Date Analyzed: 12/17/15 16:48

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

CAS Number	Analyte	DL	LOQ	Result
84-66-2	Diethylphthalate	0.27	1.0	< 1.0 U
7005-72-3	4-Chlorophenyl-phenylether	0.27	1.0	< 1.0 U
86-73-7	Fluorene	0.29	1.0	< 1.0 U
100-01-6	4-Nitroaniline	2.0	3.0	< 3.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	3.6	10	< 10 U
86-30-6	N-Nitrosodiphenylamine	0.30	1.0	< 1.0 U
101-55-3	4-Bromophenyl-phenylether	0.24	1.0	< 1.0 U
118-74-1	Hexachlorobenzene	0.28	1.0	< 1.0 U
87-86-5	Pentachlorophenol	1.9	10	< 10 U
85-01-8	Phenanthrene	0.32	1.0	< 1.0 U
86-74-8	Carbazole	0.31	1.0	< 1.0 U
120-12-7	Anthracene	0.26	1.0	< 1.0 U
84-74-2	Di-n-Butylphthalate	0.29	1.0	< 1.0 U
206-44-0	Fluoranthene	0.30	1.0	< 1.0 U
129-00-0	Pyrene	0.28	1.0	< 1.0 U
85-68-7	Butylbenzylphthalate	0.30	1.0	< 1.0 U
91-94-1	3,3'-Dichlorobenzidine	1.8	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	0.29	1.0	< 1.0 U
117-81-7	bis(2-Ethylhexyl)phthalate	2.1	3.0	< 3.0 U
218-01-9	Chrysene	0.32	1.0	< 1.0 U
117-84-0	Di-n-Octyl phthalate	0.27	1.0	< 1.0 U
205-99-2	Benzo(b)fluoranthene	0.32	1.0	< 1.0 U
207-08-9	Benzo(k)fluoranthene	0.34	1.0	< 1.0 U
50-32-8	Benzo(a)pyrene	0.30	1.0	< 1.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.36	1.0	< 1.0 U
53-70-3	Dibenz(a,h)anthracene	0.39	1.0	< 1.0 U
191-24-2	Benzo(g,h,i)perylene	0.39	1.0	< 1.0 U
108-39-4	3&4-Methylphenol	0.80	2.0	< 2.0 U
90-12-0	1-Methylnaphthalene	0.26	1.0	< 1.0 U
TOTBFA	Total Benzofluoranthenes	0.80	2.0	< 2.0 U

Reported in µg/L (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	68.8%	2-Fluorobiphenyl	82.0%
d14-p-Terphenyl	73.6%	d4-1,2-Dichlorobenzene	71.2%
d5-Phenol	67.5%	2-Fluorophenol	69.1%
2,4,6-Tribromophenol	99.7%	d4-2-Chlorophenol	73.6%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:13
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: Yes
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	69.8%
Tetrachlorometaxylene	49.5%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized: MW
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:35
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	62.2%
Tetrachlorometaxylene	53.8%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 18:56
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	56.8%

FORM I

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 12/31/15

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Date Extracted: 12/21/15
Date Analyzed: 12/26/15 19:18
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 1000 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.0025	0.010	< 0.010 U
53469-21-9	Aroclor 1242	0.0025	0.010	< 0.010 U
12672-29-6	Aroclor 1248	0.0025	0.010	< 0.010 U
11097-69-1	Aroclor 1254	0.0025	0.010	< 0.010 U
11096-82-5	Aroclor 1260	0.0028	0.010	< 0.010 U
11104-28-2	Aroclor 1221	0.0025	0.010	< 0.010 U
11141-16-5	Aroclor 1232	0.0025	0.010	< 0.010 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	70.8%
Tetrachlorometaxylene	58.5%

FORM I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPH-HCID Method by GC/FID
Extraction Method: SW3510C

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002

Matrix: Water

Data Release Authorized:
Reported: 12/18/15

ARI ID	Sample ID	Extraction Date	Analysis Date	DL	Range	Result
MB-121715 15-24545	Method Blank	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 83.5%
ASV5B 15-24545	LMW-11-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 86.8%
ASV5C 15-24546	LMW-6-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 82.6%
ASV5D 15-24547	LMW-7-1215 HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 76.1%
ASV5E 15-24548	LMW-7-1215-D HC ID: ---	12/17/15	12/18/15	1.0	Gas Diesel Oil o-Terphenyl	< 0.25 U < 0.50 U < 0.50 U 83.7%

Reported in mg/L (ppm)

Gas value based on total peaks in the range from Toluene to C12.
Diesel value based on the total peaks in the range from C12 to C24.
Oil value based on the total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-11-1215
SAMPLE

Lab Sample ID: ASV5B
LIMS ID: 15-24545
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	**7440-38-2**	**Arsenic**	0.030	3.0	**7.4**	
3010A	12/18/15	6010C	12/29/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**58,800**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,620**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**28,300**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**144**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**2,130**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**30,400**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-6-1215
SAMPLE

Lab Sample ID: ASV5C
LIMS ID: 15-24546
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	7440-39-3	Barium	1.49	500	500	U
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**27,700**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**2,420**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**14,000**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**36**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**720**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**7,600**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

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QA/QC J. Lamberts 1/17/2016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LMW-7-1215
SAMPLE

Lab Sample ID: ASV5D
LIMS ID: 15-24547
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	**7440-39-3**	**Barium**	1.49	500	**520**	
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**56,900**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,160**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**26,600**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**141**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**3,180**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**43,900**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: LMW-7-1215-D
SAMPLE

Lab Sample ID: ASV5E
LIMS ID: 15-24548
Matrix: Water
Data Release Authorized:
Reported: 01/11/16

QC Report No: ASV5-Golder Associates
Project: Landsburg
9231000002
Date Sampled: 12/15/15
Date Received: 12/15/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	Result	Q
3010A	12/18/15	6010C	12/29/15	7429-90-5	Aluminum	5.0	1,000	1,000	U
200.8	12/21/15	200.8	12/22/15	7440-36-0	Antimony	0.020	3.0	3.0	U
200.8	12/21/15	200.8	12/22/15	7440-38-2	Arsenic	0.030	3.0	3.0	U
3010A	12/18/15	6010C	12/29/15	**7440-39-3**	**Barium**	1.49	500	**513**	
3010A	12/18/15	6010C	12/29/15	7440-41-7	Beryllium	0.06	2	2	U
3010A	12/18/15	6010C	12/29/15	7440-43-9	Cadmium	0.12	2	2	U
3010A	12/18/15	6010C	12/29/15	**7440-70-2**	**Calcium**	1.2	500	**55,800**	
3010A	12/18/15	6010C	12/29/15	7440-47-3	Chromium	0.47	1,000	1,000	U
3010A	12/18/15	6010C	12/29/15	7440-48-4	Cobalt	0.29	10	10	U
3010A	12/18/15	6010C	12/29/15	7440-50-8	Copper	0.25	3	3	U
3010A	12/18/15	6010C	12/29/15	**7439-89-6**	**Iron**	3.6	200	**1,130**	
200.8	12/21/15	200.8	12/22/15	7439-92-1	Lead	0.008	10.0	10.0	U
3010A	12/18/15	6010C	12/29/15	**7439-95-4**	**Magnesium**	7.0	1,000	**25,900**	
3010A	12/18/15	6010C	12/29/15	**7439-96-5**	**Manganese**	0.11	20	**139**	
3010A	12/18/15	6010C	12/29/15	7440-02-0	Nickel	2.0	20	20	U
3010A	12/18/15	6010C	12/29/15	**7440-09-7**	**Potassium**	15.0	500	**3,110**	
200.8	12/21/15	200.8	12/22/15	7782-49-2	Selenium	0.032	5.0	5.0	U
3010A	12/18/15	6010C	12/29/15	7440-22-4	Silver	0.4	3	3	U
3010A	12/18/15	6010C	12/29/15	**7440-23-5**	**Sodium**	4.2	500	**43,000**	
200.8	12/21/15	200.8	12/22/15	7440-28-0	Thallium	0.006	2.0	2.0	U
3010A	12/18/15	6010C	12/29/15	7440-62-2	Vanadium	0.13	3	3	U
3010A	12/18/15	6010C	12/29/15	7440-66-6	Zinc	1.6	20	20	U

Reported in ug/L (ppb).
U-Analyte undetected at given LOQ
LOQ-Reporting Limit

FORM-I

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
Total Mercury by Method SW7470A

Data Release Authorized:
Reported: 12/28/15
Date Received: 12/15/15

QC Report No: ASV9-Golder Associates
Project: Landsburg
9231000002

Client/ ARI ID	Date Sampled	Matrix	Prep Date Anal Date	RL	Result
LMW-11-1215 ASV9A 15-24560	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-6-1215 ASV9B 15-24561	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-7-1215 ASV9C 15-24562	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
LMW-7-1215-D ASV9D 15-24563	12/15/15	Water	12/23/15 12/24/15	20.0	20.0 U
MB-122315 Method Blank	NA	Water	12/23/15 12/24/15	20.0	20.0 U

Reported in ng/L

RL-Analytical reporting limit
U-Undetected at reported detection limit